EXAMINING SOCIAL PRESENCE IN A PROFESSIONAL ONLINE CONFERENCE

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF THE

UNIVERSITY OF HAWAI‘I AT MANOA IN PARTIAL FULFILLMENT OF THE

REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

IN

EDUCATION

DECEMBER 2016

By

Luisa F. Castro

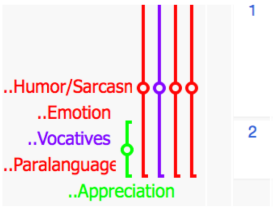
Dissertation Committee:

Curtis Ho, Chairperson
Christine Irvine
Peter Leong
Seungoh Paek
Linda Cox

Keywords: Community of Inquiry, Computer Mediated Communication, Professional Online

Conferences, Social Presence

DEDICATION



This dissertation is dedicated to RICK and RUDY who will never read it but nonetheless deserve this declaration of my adoration and much more!!!

Thank you from the bottom of heart.

ACKNOWLEDGEMETS

"Et In Arduis" is my family's motto from my mother's side dating back to 140 A.D. It means "In Suffering, We Endure". In other words, my family is known for their resilience during challenging times. Although I didn't endure The Inquisition that brought my ancestors from Italy to Spain and finally to Colombia, this dissertation has by far taken all the resilience rooted in my DNA to get me through. And, although it felt like I was very alone at times, I know that I could not have made it here without certain critical people in the process. I am honored to have worked with you throughout my doctoral program and during the process of completing my dissertation. I am deeply grateful to each of you for your unwavering support and guidance.

A special thanks to each of my committee members: Drs. Curtis Ho, Christine Irvine, Seungoh Paek, Linda Cox, and Peter Leong. I appreciate your advice, encouragement, and guidance throughout this whole process. Thank you for your faith in my ability and your encouragement. Your mentorship has been invaluable. I also want to thank Dr. Ellen Hoffman for her words of advice in my very first year of the doctoral program. She stated, "Start writing your dissertation now." I heeded her counsel and began the long journey of putting thoughts to paper, collecting hundreds of journal articles, and writing a sentence, then a paragraph, a chapter, and finally an entire dissertation all while working full time, moving between islands, living in an RV while building our house, and being present as much as I could for my husband and son.

To my mother, Amparo Botero Castro, and my father, Rodolfo Castro, who came to the United States in 1972 from Colombia with thirteen dollars in their pockets and a lot of debt in Colombia to pay off. From the time we got off that plane, my family worked hard to get the family ahead. I still live by my father's motto, "Yo no le pido a Dios que me de, solo que me ponga donde hay!"

To my best friend, Dr. Dana Riley, who has been my sister since the third grade at Saint Joseph Elementary School. You understand me better than I do myself and I am blessed and grateful to have you in my life. I appreciate the significant amount of time you spent letting me talk through my ideas and the guidance and knowledge you imparted along the way.

I am grateful to Dr. Ari Eichelberger, who came to my aid numerous times without hesitation. You shared your dissertation manuscripts, PowerPoints and tips with me and are my role model in giving a colleague a hand and boosting them up the ladder. And to you, Claire Chun, for your kindness and assistance whenever I asked for help (especially with BBC).

James Hollyer, because of your support during my master's degree, you set me on the road to this doctorate. You know the challenges I have been through in my career and never allowed me to feel sorry for myself. Even from a thousand miles away, you told me to "Keep moving forward!"

To Dr. Bert Kimura, the TCCHawaii.org Board, Learning Times, and all the participants in my study who took time from their busy schedules to participate in my study. A big Mahalo!

I would also like to thank the CCECS gang for your friendship and support these last three years. You were such helpful and willing test subjects. P.K. Mary Ann, Susan…mahalo for your encouraging words, your patience, and your understanding when I had to decline many of your invitations to have fun. You three beautiful women kept me sane. And Susan…El Camino is waiting for us.

And finally, to my number one supporter, my husband Rick. Without his confidence in me and constant support I would not have been able to finish this task. By my side, we have persevered, meeting every one of life's challenges and never letting fear get in our way. And yes, you may now get your boat.

ABSTRACT

The purpose of this multiple case study was to examine the role of social presence in a professional online conference. This study explored how presenters and attendees convey social presence and how might it influence their conference experience. The participants were presenters and attendees registered for the 21st Annual Teaching Colleges and Community Worldwide Online Conference (TCC Conference), a completely online event that occurred in Spring 2016.

Without presenters and attendees being physically at the venue, how do presenters and attendees construct and convey social presence to build a learning community? The current surge of research to understand online pedagogy and learning has targeted the virtual classroom while few studies have been conducted on social presence in online conferences. This multiple case study involved both qualitative and quantitative data using linguistic inquiry and word count, transcript content analysis, constant comparison analysis, a survey and interviews, grounded in the Community of Inquiry (CoI) theory for studying online learning experiences.

Ultimately, the study revealed that social presence was manifested in the volume and patterns of interaction in a professional online conference and can be studied using the CoI framework's social presence category. This was evident in the data gathered using multiple methods to observe and analyze what occurred during the 2016 TCC Conference and perceived experiences after the conference. Attendees projected themselves socially and affectively as well as formed perceptions of other attendees and presenters as 'real people.' For attendees, this was demonstrated by the way messages were posted in the chat box and how others interpreted those messages as well as how attendees interacted with each other and with the presenter using chat discussions. For the presenters, this was demonstrated by how they presented their content, how

they interacted with attendees, what they did and what they said to engage attendees in the sessions within the context and tools limited to the computer mediated environment.

The results of this study suggest that social presence can be established in a shorter time frame than previously thought possible compared to online courses conducted over a semester or term. Presenters and attendees participating in online presentations lasting 20 to 45 minutes were able to project observable instances of social presence. Other variables, such as presenter presence, content and delivery, attendee-presenter interaction, social media and previous relationships may have played varying roles in how social presence was established and maintained in a fully online professional conference.

“Being silent in an online classroom is equivalent to being invisible.”

- Blignaut and Trollip (2003, p. 347)

The same can be said for a professional online conference.

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER 1. INTRODUCTION

Interacting with others, in the form of social presence, has been the focus of many studies in the last three decades as a critical component in sustaining and facilitating communication in online environments. In an online course, "social presence" is understood as the ability of individuals "to project their personal characteristics into the community, thereby presenting themselves to other participants as 'real people'" (Garrison, Anderson, & Archer, 2000, p. 89). Although research on social presence in online academic courses is relatively common, little work has been published on social presence in the learning community of a professional online conference.

In recent years, the world has witnessed a steady growth of professional online conferences. From *EDUCAUSE Learning Institute* to the Smithsonian's *Education Online Conference*, this alternative to the traditional face-to-face conference is now recognized as a virtual learning experience. It contributes to a new opportunity for advancing professional development and providing a forum for academic presentations and discussions to take place (Anderson & Anderson, 2010; Wang, 1999). The professional online conference breaks down distances, removes social and cultural barriers, offers more flexible scheduling and presents an affordable option for faculty and other professionals (Futris, Adler-Baeder, & Dean, 2004; Kimura & Shimabukuro, 2001; Murphrey & Coppernoll, 2006). Some who have experienced it argue that the quantity and quality of participation and interaction among online conference attendees is better than that experienced in an in-person conference (Kimura & Ho, 2008). Given the growth of professional online conferences, research that seeks to understand these computer-mediated events through the lens of social presence is needed.

Statement of the Research Problem

Learning about new ideas while building and enhancing relationships with people to exchange information for mutual benefit are key attractions for attending professional conferences (Cherrstrom, 2012; Ravn, 2007). Conferences provide a sense of community and a critical mass for different kinds of exchanges on various current issues. In addition to the content, the social context of the experience energizes a conference (Suter, Alexander, & Kaplan, 2005). Our learning, understanding and knowledge are developed in participation with others inside the conference's educational sessions and then taken back home to continue to construct our collective knowledge building (Cherrstrom, 2012; Ravn, 2007).

Scholarly investigations conducted over three decades has shown that social presence in online learning impacts online learners' interaction and learning (de Bruyn, 2004; Gunawardena & Zittle, 1997; Polhemus et al., 2001; Tu & McIssac, 2002), learners' achievement (Mayer, 2005; Russo & Benson, 2005) learners' satisfaction (Gunawardena & Zittle, 1997; Richardson & Swan, 2003), and the development of a sense of community (McInnerney & Roberts, 2004; Rourke et al., 2001; Rovai, 2002). Exploration beyond the classroom to understand the manifestation, perceptions and influence of social presence on attendees and presenters attending a professional online conference is needed.

Purpose

The purpose of this multiple-case study was to examine the role of social presence in a professional online conference by focusing on presenters and attendees and how they projected themselves in a community of inquiry. Many researchers have called for further research in the area of social presence (Annand, 2011; Hostetter & Busch, 2006; Kear, Chetwynd, & Jefferis, 2014; Oztok & Brett, 2011; Wei, Chen, & Kinshuk, 2012). While social presence has been

applied to understand the social practices of learners in online classroom settings, it has not been applied to understand other educational communities or contexts. This dissertation intends to help fill this gap by extending social presence research to a non-classroom category to learn more about social presence within a community setting. Such a perspective may provide more holistic ways to understand learners in a computer-mediated environment and better support collaborative learning practices in online educational communities at large.

Research Questions

Research questions help narrow the focus of a study by providing a framework, organizing the research and its significance, providing direction and coherence, keeping the researcher focused throughout the investigation, and uncovering data that were collected (Cresswell & Plano Clark, 2007; Onwuegbuzie & Leech, 2006). The following research questions guided this explanatory study:

Research Question 1: How is social presence manifested in the volume and patterns of interaction in a professional online conference?

Research Question 2: How do attendees and presenters perceive social presence in a professional online conference?

Research Question 3: How does social presence influence the conference experience of attendees and presenters in a professional online conference?

Significance of the Study

The goal of this study is to investigate how presenters and attendees present themselves as being "real" and "connected" with others in a professional online conference. This research will examine how presenters and attendees in a professional online conference convey social presence and how might it influence their conference experience.

Online social presence is hypothesized to be a useful concept in the design of professional online conferences because presenters and attendees are in physically different locations for the entire time of their interaction. Being in different locations, however, poses a challenge in establishing social presence because of the absence of facial expressions, gestures, and tone otherwise found in face-to-face communication (Rourke et al., 2001; Song et al., 2004). A lack of immediacy in responses also exists in the online context in comparison to what could typically occur in a face-to-face conference. Therefore, recommendations should be developed for creating online social presence to increase interaction between presenters and attendees, and between attendees. The online social presence factors that may be found in this study could have implications for developing a variety of design strategies (i.e., online conference design strategies, online presenter design and delivery strategies, and online attendee's social interaction strategies) that may lead to more satisfactory conference experiences.

This study was designed to contribute to the research on online communication, focusing primarily on the characteristics of social presence within multiple synchronous sessions in an online learning environment and their influence on the quality of the conference experience in terms of perceived satisfaction, community building, learning and levels of participation. To date, research related to social presence has focused on individual courses and institutions with few exceptions and the influence of social presence and its categories was determined not to be static over time. It shifts across a course duration and possibly across disciplines. As such, research needs to be conducted in other virtual communities of inquiry, such as professional online conferences. Organizers and presenters in online conferences can benefit by developing better online learning events while providing best practices for presenters and attendees on how they can maximize their social presence in professional online conferences.

Conceptual Framework

The Community of Inquiry (CoI) framework (Garrison, Anderson, & Archer, 2001) served as a model for this study. "It is a dynamic process model designed to define, describe and measure elements supporting the development of online learning communities" (Swan & Ice, 2010, p. 2). Social presence, one element of the model, was a focus of early research into online learning examining whether instructors could create social presence in a medium that was deprived of visual cues (Gunawardena & McIsaac, 2003; Gunawardena & Zittle, 1997; Tu & McIsaac, 2002; Tu, 2000).

Swan (2015) has identified three major schools of thought on how the perceptions of social presence have evolved over time: (a) the technology-driven group who have focused largely on technologies and participant behaviors and view social presence as intimately related to communication technologies; (b) the participant-driven group who view social presence as an outcome of student impressions of other participants in online environments and who focus on authentic social learning experiences frequently utilizing the Community of Inquiry model; and (c) the literacy-oriented group who view social presence as an "overarching literacy for teaching and learning experiences that employs Whiteside's Social Presence Model (2007; 2015)" (para 3). Whiteside (2015) maintains that social presence is "a master conductor that synchronizes the instructor, students, norms, academic content, learning management system (LMS), media, tools, instructional strategies, and outcomes within a learning experience" (p. 11). Scholars are exploring the concept of social presence as a "new literacy that is essential to a successful online teaching and learning experience" (Dikkers, Whiteside, Lewis, 2013, p. 156).

Within the context of exploration, this research investigated the professional online conference as a community of inquiry where participants are acting as active thinkers, rather than

passive learners, in a supportive and collaborative learning environment. The application and evaluation of an expanded CoI framework to a professional online conference was a contribution of this research to the field and specifically to the understanding of social presence. Adopting and adapting the theories, models and concepts by Arbaugh et al., (2008); Garrison, Anderson, and Archer, (2000); Gunawardena and Zittle, (1997); Rourke, Anderson, Garrison, and Archer, (1999); Stone and Chapman, (2006); Swan and Shih, (2005); and Whiteside, (2015) provided the conceptual framework guiding this study to explore social presence in a professional online conference. (See Figure 1).

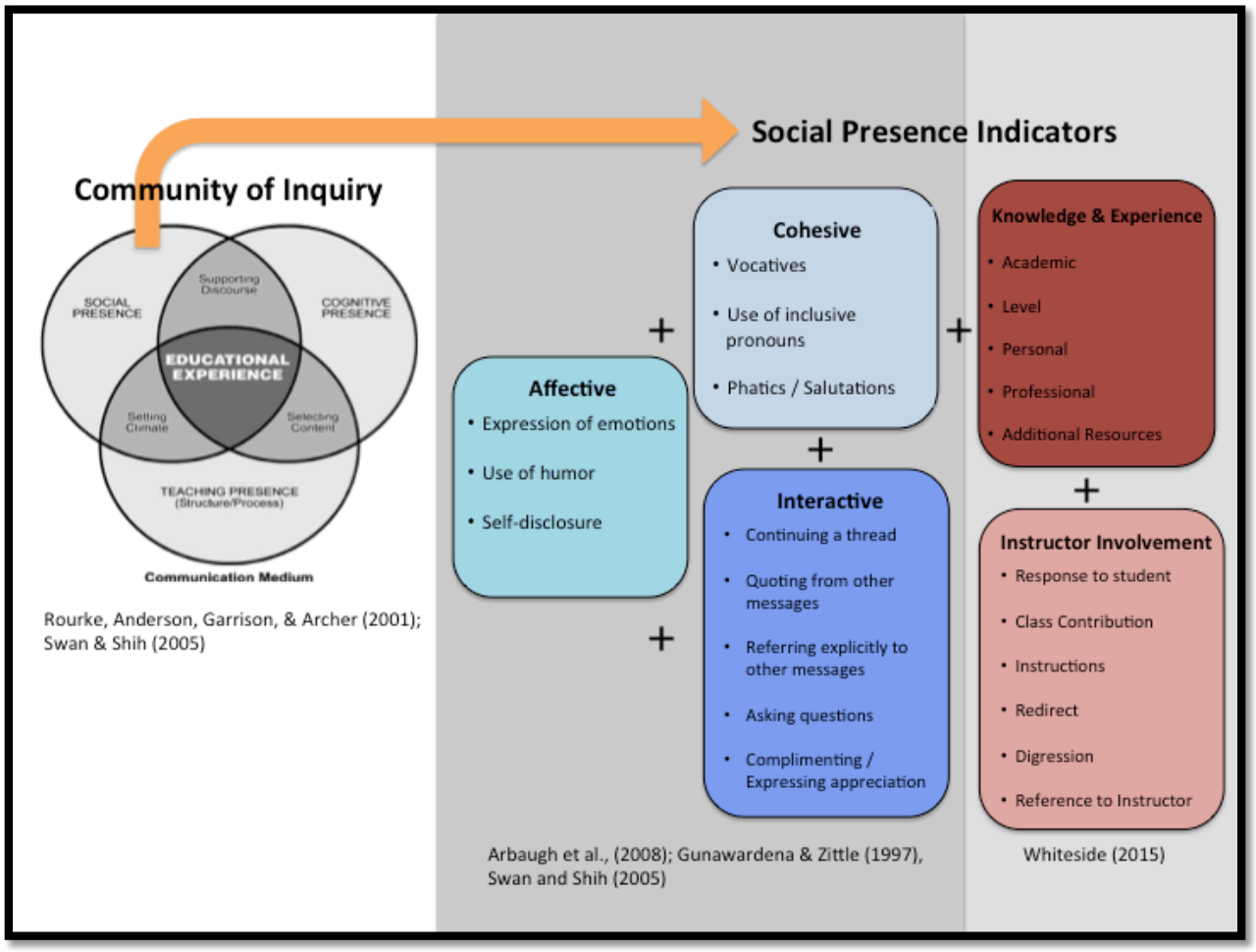


Figure 1. *Conceptual framework of Social Presence within the CoI and corresponding indicators*.

Summary of Methodology

The framework for this study, based on a case study approach using multiple methods, was grounded in theory for studying online learning experiences as defined by the CoI framework. The CoI has been used to study the changing aspects of a community of learners during a semester long course or throughout an entire academic program (Arbaugh, Bangert, & Cleveland-Innes, 2010; Garrison, Anderson, & Archer, 2000; Kanuka, Rourke, & Laflamme, 2007; Swan, Garrison, & Richardson, 2009). The research takes an innovative approach to using the CoI to study the dynamics of a community of presenters and attendees online together over the course of a three-day professional conference.

Participants were *Teaching Colleges and Community Worldwide Online Conference* (TCC Conference) presenters and attendees who gave permission to allow analysis of their textual and audio exchanges from the recorded online sessions; answered a questionnaire, and/or participated in a one-on-one interview. The focus for this study was analysis of (a) transcripts from six conference sessions to address the first research question; (b) 51 completed questionnaires to address the second research question; and (c) 18 interviews to address the third research question.

This study employed a multiple-methods approach developed by scholars to investigate what online behaviors are exhibited during interactive online discussions to create social presence using word count and linguistic inquiry, transcript content analysis, and constant-comparison analysis. Participants were also administered a questionnaire based on a combination of instruments developed by Gunawardena and Zittle (1997), Swan et al. (2008), and Arbaugh et al., (2008). Three social presence categories were investigated along with perceived presenter involvement, perceived learning, and perceived satisfaction. In-depth, semi-structured interviews

were conducted with a diverse group of presenters and attendees using questions from indicators of social presence originally developed by Stone and Chapman (2006) for instructors and by Swan and Shih (2005) for students. As other scholars have noted, understanding learners' perceptions of social presence is as important as it is to study what learners do and say online (Lowenthal, 2012; Swan & Shih, 2005).

Prior to data collection, the research protocol was submitted to the Institutional Review Board (IRB) for approval at the participating institution. The data for this study was collected from the discussions captured from six recordings from the TCC Conference, answers to an online questionnaire, and one-on-one personal interviews with attendees. While the TCC Conference took place in Spring 2016, and an archived copy of the entire online conference was stored on a secure university conference web site, only the data from presenters and attendees who gave their permission and consented to participate in this study was analyzed. Three methods were used to analyze the data gathered from the recorded sessions; (a) word count and linguistic inquiry (b) transcript content analysis, and (c) constant comparison analysis, while data from the online survey questionnaire was collected and responses to the Likert-type questions averaged by variable to produce quantitative ratings for four constructs. Lastly comparative analysis was used to analyze the transcripts from the interviews.

Role of the Researcher

VanDeVen (2007) describes the outside researcher as a "detached, impartial onlooker who gathers data" whereas an inside researcher is a "participant immersed in the actions and experiences within the system being studied" (pp. 269–270). Breen, (2007) argues that "the insider/outsider dichotomy" (p. 165) is simplistic, and that neither term adequately captured the

role this researcher occupied, and therefore, she contends that she was engaged in both roles throughout the course of this study.

The researcher had prior knowledge and understanding of the environment and context being studied. Having been an attendee, session moderator, proposal reviewer, and conference evaluator of the TCC Conference for four years, the researcher was knowledgeable about the design and organization of the conference. However, the researcher was not professionally or personally associated with the presenters and attendees since participation in the TCC Conference changes every year with 500 individuals participating online over the three-day event. Merton (1972) states that the insider is an individual who possesses prior intimate knowledge of the community and its members. The researcher did not know who would consent to participate in the research as a presenter or attendee. Knowledge of the presenters who consented to their sessions being available for content analysis was out of the researcher's control. However, because this was a study conducted by a doctoral candidate affiliated with the university that also helped to organize and sponsor the event, the researcher's identity and goals for the study were clearly and repeatedly announced to all who registered for the 2016 TCC Conference. The researcher did not collect the data from the recorded session transcripts without prior consent. Nor could the sessions be randomly selected from the many that were recorded, as the consent from both presenters and attendees had to be provided prior to each event.

By the end of this study, the researcher was better able to assess the role she played in her research, including the personal experiences that led her to consider herself to be both inside and outside or perhaps neither inside nor outside of the experience she was studying, to demonstrate how her dual role influenced the scope of her study, to access participants, in the collection and analysis of data, and the maintenance of research rigor.

Limitations

Limitations to the study included the uncertainty of the number of final participants in the study, especially those who were willing to allow content analysis of their chat discussions. Other limitations included:

1. The study was limited to the TCC Conference, which means that the results may not parallel the impact of this phenomenon on other online conferences being conducted.

2. The study was limited to only one TCC Conference occurring in 2016.

3. The ability to arrange the interviews around the participants' schedules.

4. The researcher was not experienced in using MAXQDA+ at the beginning of the study.

5. The researcher being a novice to the process of coding transcripts; which may have introduced bias in the transcript analysis.

6. Possible bias could exist due to poorly worded questions and interviewee providing the researcher the answer he or she wanted to hear (Yin, 2014).

Definition of Key Terms

This section presents the definition of key terms. The definitions, as presented, are intended for the purpose of this dissertation.

Community of Inquiry (CoI) is a framework developed by Garrison, Anderson, and Archer (2000) as an online learning research tool. The CoI defines a good e-learning environment through three major components: (a) cognitive presence; (b) teaching presence; and (c) social presence.

Computer-Mediated Communication (CMC) is defined as "a process of human communication via computers, involving people, situated in particular contexts, engaging in processes to shape media for a variety of purposes" (December, 1997, para. 3).

Online Communities are groups of people who interact with each other via the Internet. According to Whittaker, Isaacs, and O'Day (1997),

> Members have a shared goal, interest, need, or activity that provides the primary reason for belonging to the community; members engage in repeated, active participation and there are often intense interactions, strong emotional ties and shared activities occurring between participants; members have access to shared resources and there are policies for determining access to those resources; reciprocity of information, support and services between members is important; and there is a shared context of social conventions, language, and protocols (p. 137).

Professional online conference is a professional development event that is organized and attended online (Anderson & Anderson, 2010).

Social Presence. Rourke, Anderson, Garrison and Archer (1999) regard social presence as one of the three fundamental "presences" that support learning, defining it as "the ability of learners to project themselves socially and affectively into a community of inquiry" (p. 50). Garrison (2009) redefined social presence as "the ability of participants to identify with the community (e.g., course or study), communicate purposefully in a trusting environment, and develop interpersonal relationships by way of projecting their individual personalities" (p. 352).

Chapter Summary

Research on social presence illustrates the importance of being "present" when teaching and learning online. To date, hundreds of studies have been conducted on social presence in online courses. Researchers have identified social presence as an important and essential element for any successful and effective online learning experience (Gunawardena & Zittle, 1997; Short, Williams, & Christie, 1976; Swan, 2005). However, scant information exists on social presence

behaviors by participants in alternative online learning environments. The researcher sought to explore social presence by adapting and applying it to a new educational setting and context; that of a professional online conference. To achieve the goal of this research and to assess the research questions, this study is divided into five chapters.

Chapter One introduces the overall idea of the dissertation research and framework. It provides the general background, purpose, and significance of this study. It further presents definitions of terms concerning social presence and the research overview of the subsequent chapters of this dissertation.

Chapter Two presents an overview of conferences, the CoI framework and social presence in order to provide a theoretical framework and a better understanding of these areas. The review of the literature focuses on relevant research on professional online conferences, the CoI and social presence theories, and learning communities in online educational contexts.

Chapter Three describes the research methodology used in this study. Data instruments, collection and analysis methods for exploring social presence in the online nonacademic setting are presented. The research questions are also presented in this chapter.

Chapter Four will discuss the results of the study to better understand the nature of social presence in a professional online conference. The last chapter, Chapter Five, provides an overall summary of the study, including limitations as well as implications for online education and future research directions.

CHAPTER 2. REVIEW OF LITERATURE

In the following chapter, the researcher synthesized past research on conferences in general and specifically research on professional online conferences to provide a foundation and some background for this study. A review of the relevant research on the CoI framework is provided as well as a review of the history of social presence, with synthesis on the differences in how researchers define and measure social presence. The chapter concludes by addressing the Conceptual Framework for this study.

Conferences

Social learning theorists have long argued that learning is a socially constructed phenomenon; that is, that knowledge is constructed through social interaction with others (Bibeau, 2001; Dewey, 1916; Vygotsky, 1978). This argument suggests that the act of learning and feeling a social connection with others are inseparable constructs. Such a claim implies that learning is optimized when individuals feel a sense of connection with others.

Conferences are an example of this need to engage with other fellow humans. The term means to literally "bring together," according to the Latin roots of the word "conference" ("Word roots," n.d.). A conference is a gathering of individuals with a mutual interest or background, for the purpose of meeting each other and learning about and discussing issues, ideas and work that focus on a familiar topic with the objective of bringing what is learned back to ones organization and sharing with others (Farkas, 2006; Oualha & Matula, 2009; Rabinowitz, 2012; Senese, 2010). Conferences are "key sites for the social orchestration of academic knowledge and for the intrusion of sociality into forms of social knowledge construction" (Camic, Gross, & Lamont, 2011, p. 152). They are events that bring together people and ideas to engage in meaningful dialogue and substantive interaction with fellow experts by presenting their research, work, and

theories, to develop inter personal relationships and similar interests, and to disseminate work (Graham & Kormanik, 2004; Rabinowitz, 2012; Rom, 2012). Conferences can be significant learning experiences for attendees (Mundry, Britton, Raizen, & Loucks-Horsley, 2000; Reychav & Te'eni, 2009). Generally held once a year, conferences are often organized by the professional association of a field or specialty to provide practitioners the opportunity to exchange ideas and enhance networking, which, in academia, is critical to many professional benefits including collaboration, funding, and employment (Chapman, Wiessner, Storberg-Walker, & Hatcher, 2007; de Vries & Pieters, 2007; Rabinowitz, 2012). Similar to academic conferences are professional conferences, which focus more on sharing information or knowledge on practical issues, the actual professions participants work in, and with regulations, funding, and other issues that affect the profession (Shaffer & McNinch, 1997). A professional conference differs from an academic conference in having a wider purpose, and usually attendance from a wider range of specialists (Rabinowitz, 2012; Ravn, 2007).

An Internet search for why people attend professional conferences indicates four reasons: to learn, network, create new content, and share. Learning about new ideas and building and enhancing relationships with people with whom one can exchange ideas for mutual benefit is a key attraction for attending professional conferences (Chapman et al., 2009; Neal, 2002; Ravn, 2007; Suter, Alexander, & Kaplan, 2005; Wiessner, Hatcher, Chapman, & Storberg-Walker, 2008). Conferences have, as a primary intent, the purpose of imparting knowledge and information of relevance to attendees. Attending a typical weeklong conference put on by a professional association, government agency, or commercial conference organizer is a common learning forum for professional development. Jacobs and McFarlane (2005) portray conferences as "presenting, evaluating, and discussing disciplinary and methodological developments as a

reflective community of practice; ensuring that, as a whole, research and/or professional practice progresses both substantially and methodologically" (p. 319). Conferences provide a sense of community and a critical mass for different kinds of fruitful exchanges of conversations and collaboration. Egri (1992) claims that academic conferences serve as methods for socializing participants within the academic profession, even imparting "valued attitudes and behaviors within the academic profession's culture" (p. 91). Reychav and Te'eni (2009) maintain that "during a conference, attendees gain from knowledge sharing in its different settings, and that it is important to analyze and understand the ways it contributes to enrich the attendees in terms of the formation of social relationships, initiations of meetings, career enhancement and, perhaps most significantly, learning that leads to future research" (p. 1266). Learning, understanding and knowledge are developed in participation with others inside the conference educational sessions and then taken back home where attendees might continue to construct their collective knowledge-building (Cherrstrom, 2012; Ravn, 2007). Researchers such as de Vries and Pieters (2007), Graham and Kormanik (2004) and Rom (2012), however, have been questioning these assumptions citing that no research exists showing that conferences play an important role in the dissemination of knowledge between attendees or that conferences contribute to the co-construction of new ideas during and after the actual event. Perhaps this is due to the fact that little research has been done on academic and nonacademic conferences. More research is needed to measure what impacts these shared networking events have on learning outcomes and attendee relationships.

In addition to the content, the *social* context of the conference experience aims to energize and make it worth the effort and expense (Suter et al., 2005). In evaluations of conferences and meetings, Mundry et al. (2000) noted that people consistently rated the

opportunity to meet and talk with interesting and knowledgeable people as one of the main benefits of conference attendance, while Cherrstrom, (2012) and Graham and Kormanik (2004) suggest these incidental and informal contacts have even greater learning opportunities than the formal presentations themselves. The expected outcome is that conferences build stronger networks among participants and therefore increase participant satisfaction (Rom, 2012; Siemens, Tittenberger, & Anderson, 2008). Research done by de Vries and Pieters (2007) found that conferences were valued for the exchange of contact information and therefore seemed to be effective relative to building and sustaining networks. The functions of a conference are: knowledge sharing, collaboration, networking, acknowledgment and socializing (Weller, 2011). Although these ideals and assertions are reasonable, little consideration has been given either to developing a theoretically informed understanding of conferences as an arena for fostering learning, or to measuring the degree to which conferences are effective at building a community of learners (Jacobs & McFarlane, 2005).

Online Professional Conferences

The term "virtual conference" was first used by Anderson (1996) to describe a professional development activity that uses telecommunication technologies to support interaction and communication and to decrease the obstacles to participation created by time and place. Similar to a traditional conference, the virtual conference is an opportunity for the interchange of ideas, talking and networking with colleagues, and sharing and learning from other conference attendees engaged in similar work (Welch, Ray, Melendez, Fare, & Leach, 2010).

What has been described as the first virtual conference, the Bangkok Project was an experimental conference organized by The International Council for Distance Education in 1992

(Anderson & Mason, 1993). Using the Internet to link distance educators, who at that time were few and spread across the globe, participants were able to share in the discussions at the face-to-face conference simultaneously occurring in Bangkok (Anderson & Mason, 1993; Wang, 1999). Since then, virtual conferences have served as alternatives to traditional in-person conferences and evolved from e-mail to live chat and Web pages in the mid 1990's (Wang, 1999) to immersion into virtual worlds in the 2000's (McWhorter, Mancuso, & Roberts, 2014). Common challenges over the years have been to stay current and incorporate the ever changing elements of the Internet into professional development experiences for participants (Shimabukuro, 2000). Discovering research information about these events was also challenging. No data were found on how many virtual conferences take place annually, how much revenue they generate, the number of individuals who attend them, or the perceptions held about them (Bell, 2011). Without such fundamental information the rate at which they are developing is not known. An email request posed to GlobalEvents List, a directory of scientific events worldwide, elicited the following response, "No idea how you can figure this out, as we indeed don't include this [virtual conferences] category on our site. My guess would be that it numbers in the many tens or even hundreds of thousands, since there are thousands of real life conferences organized every year" (C. Blair, personal communication, August 24, 2015). Needless to say, virtual conferences have grown in popularity, with organizations and associations across many specialties running them on an annual basis such as the *ARMA International Flipped! Virtual Conference* (www.arma.org/r1/conferences/virtual-conference), the *COMMON 2015 Virtual Conference & Expo* (www.common.org/index.php/virtual-conference-a-expo.html), *Smithsonian Problem-Solving Online Conference* (www.smithsonianconference.org/expert/), *Library 2.015 Worldwide Virtual Conference* (http://www.library20.com), *K12 online conference*

(http://k12onlineconference.org/2015-schedule/) and *Teaching, Colleges & Community* (*TCC) Worldwide Online Conference* (http://tcchawaii.org/call-for-proposals-2016).

A review of the literature finds the definition of virtual conference changes depending on the journal, event or technology concerned. A search on scholarly sites found references to 'on-line virtual conference,' 'web conference,' 'electronic conference,' 'computer conference,' 'cyber conference,' 'digital conference,' and 'professional online conference,' all describing online learning events. These are not to be confused with 'computer conferencing,' which, in the academic arena is the use of computers to deliver and support group work independent of time and space constraints (Rekkedal & Paulsen, 1989). Computer conferencing is synonymous with computer-supported collaborative learning, which is defined as the study of "how people learn together with the help of computers" (Stahl, Koschmann, & Suthers, 2006, para. 1).

An early definition presented by Green (1998) described online conferences as events that "use Web-based conferencing software, whether synchronous (often called 'chat') or asynchronous" (p. 1). A year later, Wang (1999) defined the online conference as "one organized and attended exclusively through the Internet" (History of Online Conferences section, para. 1). Shimabukuro (2000), one of the co-founders of the TCC Conference, describes them as "professional education events that serve as alternatives to traditional face-to-face (F2F) conferences" (para.1), while Wilkinson and Hemby (2000) defined virtual conferences as "meetings held via the Internet where communications occur by means of Web pages and attendance consists of access to those pages and the discussion of their content by electronic mail" (p. 14).

In order to avoid limiting the definition of online conferences or becoming dated by the type of technology used, a more current description by Anderson and Anderson (2010) was

adapted for this study. A *professional online conference* is a professional development event that is run and attended online. Like in-person professional conferences, professional online conferences are planned learning activities with sessions, panel discussions, and sometimes social media events running on a real time schedule over a defined period of time that can be accessed anywhere with access to the Internet (Kimura & Shimabukuro, 2001; Wilkinson & Hemby, 2000). They are typically intended for a certain field or subject matter, with a potential for high levels of interaction between and amongst all participating in the event (Anderson & Anderson, 2010). Events usually occur synchronously and recorded sessions and reading resources are often available on demand after the event has ended for those unable to participate live or who wish to watch the sessions again at a later time. All of this is made possible by a host of technology tools such as multi-way IP audio and video, application sharing, breakout rooms, downloading and sharing of PowerPoint presentations and images, instant messaging, interactive polling features, shared and interactive whiteboards, web tour capabilities, and virtual 3D experiences.

Perceived Advantages to Online Conferences

The online conference is perceived as a valuable tool that can overcome many of the restrictions of temporal, spatial and cost limitations, and access that inhibit participation in face-to-face conferences (Murphy, Antonio, & Reushle, 2012). Advantages such as convenience, flexibility and cost savings as well as increased accessibility, interaction and learning are some of the reported benefits afforded by an online conference (Futris, Adler-Baeder, & Dean, 2004; Kimura & Shimabukuro, 2001; Murphrey & Coppernoll, 2006; Nudell, Roth, & Saxowsky, 2005; Parcell & Giddens, 2002; Siemens et al., 2008).

Convenience is a factor much of the literature has cited. For many professionals, not having to leave work, families, their labs or their classrooms, is an important reason to attend online conferences (Kimura & Ho, 2008; Welch et al., 2010). Online conferences do not require an attendee's physical presence, allowing the person to attend presentations and social media events from anywhere, as long as the person has Internet access and a mobile device or computer (Kimura & Shimabukuro, 2001).

Not including the cost of registration, in-person conferences usually require travel, hotel accommodations, and meals, all of which can become expensive for an annual event lasting more than a week (Farkas, 2006; Welch et al., 2010; Wilkinson & Hemby, 2000). Online conferences, on the other hand, enable attendees to avoid travel expenses and to pay only the conference fee, thus reducing the out of pocket cost of professional development, especially for those in remote locations or with financial constraints (Kimura & Ho, 2008; Malik, 2011).

Since online conferences can be entirely digital experiences, all events can be captured and accessed at a later time. For instance, those who register for the TCC Conference are able to log into a member page on the website and access all sessions, keynote presentations, and resources that were provided during the conference long after the conference ended. Other conference organizers, like the *2012 Follow the Sun Online Learning Futures Festival,* provide recordings to all sessions free of charge to participants to support the concept of open educational resources (Murphy, Antonio, & Reushle, 2012). Permanent access to recordings means attendees can watch the sessions that were most pertinent to their interests as many times as they need and access other sessions virtually any time they log on (Daniels, 2013; Farkas, 2006; Stevens, 2005). How often this is done and whether or not attendees utilize this service is not well documented. Siemens et al. (2008) claimed that attendees "spend significantly more

time exploring resources and discussing ideas with presenters and other conference attendees" (p. 26) when conference proceedings are available online.

Some researchers have argued that the quantity and quality of participation and interaction among online conference attendees is better than that experienced in an in-person conference (Kimura & Ho, 2008; Minshull, 2006). Minshull (2006) evaluated the responses from 96 attendees in the *Innovating e-Learning 2006* online conference. However, no data was provided on how many attendees perceived that the level of participation and interaction was greater in an online conference and the researcher only quotes two attendees making these claims. In a survey conducted by Kimura and Ho (2008), 69% of respondents thought the TCC Conference experience was equal to or better than a traditional in-person conference while more than 80% agreed that the interaction among presenters and participants were of very high quality. However, questions were not asked about the quantity and quality of interaction among online conference attendees compared to that experienced in an in-person conference.

The new skills attendees are learning while managing online technologies and online tools during their online conference experience are often not reported. As online conferences become more sophisticated, more technologies are added to the assortment of applications available to the organizers, presenters and attendees. Use of social networks to increase conference interaction and pre-conference publicity are also now practiced (Malik, 2011). However, the literature does not adequately cover the current and potential application of social network tools in these events. Depending on the conference setup, the design may be stimulating new digital habits and various levels of interaction and collaboration. From learning how to navigate the conference Web site to using Web 2.0 technologies, attendees are given the opportunity to practice existing skills or learn new technology skills depending on

the conference management system. According to Siemens et al. (2008), this technology presence is transforming the conference practice by affording new ways of interacting before, during, and after the conference.

Perceived Disadvantages to Online Conferences

The advantages that are said to be characteristic of professional online conferences are ironically also the disadvantages cited (e.g., lack of networking, limited social interaction, and convenience). Results from surveys gathered over a ten year period from the TCC Conference indicated that survey respondents desired more interaction and an experience that mimics a traditional conference that allows for social exchanges to occur (Ho, Kimura, & Narita, 2006). "Conferences are only partially about content" (Suter et al., 2005, p. 48), meaning that attendees are seeking the face-to-face informal interaction and social experiences with colleagues they are used to having from in-person conferences. Networking is possible during online events, as long as the conference organizers have made it a priority, an argument made by Anderson and Anderson (2010). According to these two scholars, inappropriate use of technologies and attendees' lack of skill and experience are the cause of some of these issues and not characteristic of professional online conferences.

Online conference attendees are likely to be surrounded by distractions and opportunities to do something else, making them more likely to multitask and less likely to watch a presentation or make time to interact in an online social networking event (Anderson & Anderson, 2009a). "Completely online conferences do not provide attendees the opportunity to break from daily activities" (Siemens et al., 2008, p. 26), therefore, these events require focus and attention to what is happening on the screen as well as motivation to follow through and actually attend the sessions. How this affects an attendee's online presence and interaction with

others during the online conference is an unknown, albeit important phenomenon to explore, due to a nearly total absence of literature about this process. As professional online conferences are still in their formative years and the literature does not contain any specific details about their adoption and impact, this study could trigger a research framework for further research investigations. Thus, the paucity of research regarding social presence in professional online conferences requires the establishment of a theoretical link through other related research.

Community of Inquiry

The Community of Inquiry (CoI) framework was developed by Garrison, Anderson, and Archer (2000) as an online learning research tool. Garrison and his colleagues specifically developed the CoI framework to understand the complex forms of written language used in computer mediated activities to promote higher-order learning (Arbaugh, 2007). It drew upon previous research related to computer mediated conferencing (Gunawardena, Lowe, & Anderson, 1998), content analysis (Henri, 1992), computer mediated communication (Salton, 1980) and text-based communication (Herring, 2004). The CoI framework, as shown in Figure 2, is formed by the connection of three multi-dimensional elements – cognitive presence, teaching presence and social presence – in a community of learning comprised of teachers and students (Garrison et al., 2000). "The framework has resonated with the online learning community and provided insights and methodology for studying online learning" (Garrison & Arbaugh, 2007, p. 158). Since its publication in 2000, the article has been cited 2,887 times as indicated by Google Scholar as of September 2015, making it a well-known model used to measure online learning effectiveness.

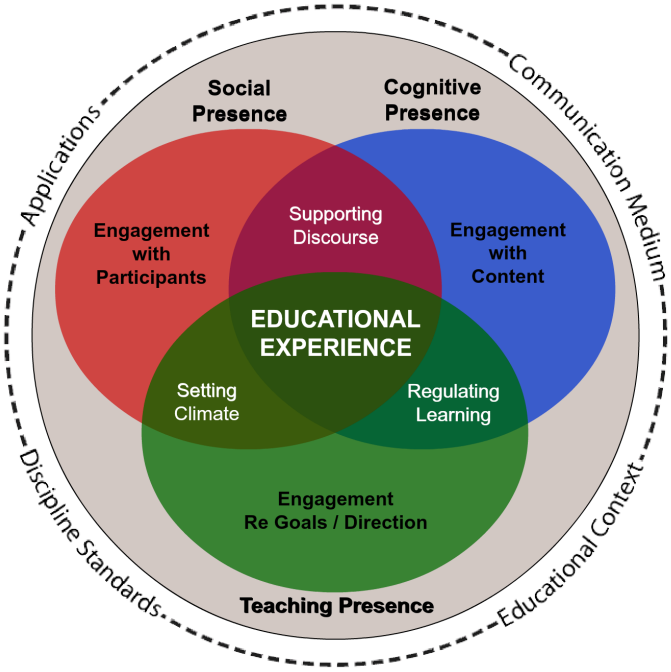


Figure 2. Garrison et al. (2000) Community of Inquiry Framework.

Lipman (1991) is credited for coining the original term of a "community of inquiry." In a CoI, "students listen to one another with respect, build on one another's ideas, challenge one another to supply reasons for otherwise unsupported opinions, assist each other in drawing inferences from what has been said, and seek to identify one another's assumptions" (Garrison & Anderson, 2003, p. 27, citing Lipman, 1991, p. 15). It combines the social dimension of 'community' with the cognitive dimension of 'inquiry' to create online learning environments. Engrained in constructivist and social learning principles, the idea of combining learning and community, is credited to John Dewey, who emphasized collaborative constructivism and practical inquiry (Garrison & Arbaugh, 2007; Garrison, Cleveland-Innes, & Fung, 2010; Swan, Garrison, & Richardson, 2009). In the CoI framework learning is understood to be a social process of constructing meaning from a personal perspective and then refining and confirming understanding through interaction with others in a community of inquiry (Garrison, 2011). This

community is “a group of individuals who collaboratively engage in purposeful critical discourse and reflection to construct personal meaning and confirm mutual understanding” (Garrison, 2011, p. 15). Thus the CoI framework views community as emerging as a result of the relationship between the three elements: social presence, teaching presence and cognitive presence to support online teaching and learning.

Social presence is defined as “the degree to which learners feel socially and emotionally connected with others in an online environment; cognitive presence describes the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse” (Cleveland-Innes & Campbell, 2012, p. 270); while teaching presence is “the design, facilitation and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes” (Swan et al., 2009, p. 322). The three elements of the model have been used together and separately to define, describe and determine the development of online learning communities.

The CoI framework is deemed to be a valid and reliable instrument based upon its adoption by hundreds of scholars to develop research about the online educational experience (Arbaugh, 2007; Carlon et al., 2012; Donohoe & Donohoe, 2008; Garrison et al., 2010; Lee, 2014). However, as online learning has become more mainstream, researchers are identifying gaps and challenges with the CoI framework. One issue that has emerged is the restrictive use of the CoI framework to analyze text-based asynchronous online discussion forums (Lambert & Fisher, 2013). With newer forms of web-based technologies, like wiki-pages, blogs, twitter, and Second Life, students are experiencing cognitive, teaching and social presence through a variety of tools that are providing more engaging platforms for building community. Subsequently, some researchers propose a shift from only studying discussion forums to exploring the influence of

other tools that can be equally effective in developing communities of inquiry in online learning (Lambert & Fisher, 2013).

Disagreement exists as to whether the CoI framework can be used to produce learning that leads to positive outcomes (Oztok, Zingaro, Brett, & Hewitt, 2013; Rourke & Kanuka, 2009) as well as the significance of social presence in the CoI framework (Annand, 2011). Critical debates are ongoing among scholars (Annand, 2011; Rourke & Kanuka, 2009; Xin, 2012), and several have sought ways to strengthen and refine the CoI framework. Some (Shea et al., 2012; Shea & Bidjerano, 2010) have adapted the CoI framework to include learning presence as a fourth type of presence while others have explored the idea of an instructor social presence (Lowenthal & Lowenthal, 2010; Mandermach, Gonzales, & Garrett, 2006; Whiteside, 2007) and an expertise presence (Lui et al., 2007).

Another issue scholars have with the CoI framework is its lack of consideration for characteristics other than course conduct and participant behaviors. Other predictors of course outcomes in online and hybrid learning that are believed to be significant include the course management system, academic subject, course design, timeline and community building (Arbaugh & Rau, 2007; Parsell & Duke-Yonge, 2007; Redmond & Lock, 2006; Szeto, 2015). Thus, researchers are beginning to understand how online learning in general and social, cognitive and teaching presence specifically can manifest differently under various educational settings (Lowenthal, Wilson, & Parrish, 2009; Lowenthal, Lowenthal, & White, 2009; Szeto, 2015). These indicators, however, rely predominantly on post-hoc information gathered through surveys to determine the subjective experiences of participants after they have collaborated on a shared task (Hostetter & Busch, 2006; Nowak & Biocca, 2003; Remesal & Friesen, 2014). Researchers, for the most part, are using questionnaires rather than qualitative and/or

mixed methods to understand cognitive, teaching and/or social presence. Relying on one type of analysis can lead scholars to make mistakes in how and what they are interpreting about the core incident in question (Lowenthal & Lowenthal, 2010). This may result in a narrowly focused understanding of the complexities of online learning. Relying solely on questionnaires can also result in respondents providing socially desirable answers (Hostetter & Busch, 2006) and self reported data that is retroactive and insensitive to the changes in cognitive, teaching or social presence over the course of the online interaction (Kramer, Oh, & Fussell, 2006). The increase and the variety of online learning opportunities confirm the need to modify existing frameworks or develop new approaches to examine and explore learner's perceptions and actual behaviors in such environments.

Social Presence Theory and Computer Mediated Communication

To begin to understand social presence and its manifestation in an online environment one must first understand communication. "How humans communicate in professional, social, and educational settings varies widely, depending upon not only the environment but also the method of communication in which the communication occurs" (Nirban, Sangwan, & Rathore, 2011, p. 93) which, in the case of professional online conferences, is through computer-mediated communication (CMC). According to Romiszowski and Mason (1996), CMC is a "generic term now commonly used for a variety of systems that enable people to communicate with other people by means of computers and networks" (p. 438). Some examples include email, discussion boards, computer conferencing, chat rooms, instant messaging, and social networking such as Facebook, wikis, blogs, etc. A more interesting definition of CMC is provided by December (1997) as "a process of human communication via computers, involving people, situated in particular contexts, engaging in processes to shape media for a variety of purposes" (para. 3). In

this light, CMC functions within human contexts as a rich setting for communication to overcome the challenges of negotiating the broadcast of a multitude of nonverbal cues.

The varied approaches to the study of the effects of CMC on learners began in the late 1980's and early 1990's (Daft & Lengel, 1984; Rutter & Stephenson, 1979; Walther, 1996). Of the multiple theoretical perspectives arising from CMC, the way learning and social presence occur online has been the focus of hundreds of studies separate from the CoI model. Social presence theory did not originate with the CoI framework but actually dates back to the work of Short, Williams, and Christie (1976), who initially developed the theory to view, explain, and cognize the effect telecommunications media has on the way two people communicate. They defined social presence as the "degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships" (p. 65). They linked the concepts of intimacy (Argyle & Dean, 1965) and immediacy (Wiener & Mehrabian, 1968) with social presence. When interactivity (Rafaeli, 1988) was included two decades later, social presence was redefined by associating it to these three concepts with a focus on the importance of interpersonal relationships. Also known as social cues in a communication medium, intimacy is the feeling of close connection with others influenced by the factors of physical distance, eye contact, smiling, and self-disclosure, whereas immediacy is a measure of psychological distance that a communicator situates between herself and the receiver of her message including how she "uses first names, asks questions, uses humor, uses personal pronouns, discloses personal information, and uses … emoticons or punctuation marks…" (Menzie, 1991, p. 38). Viewed from the perspective of Short et al. (1976), text-based CMC was considered to be low in social presence because no capacity existed for the communication medium to broadcast facial

expressions and other non-verbal cues; factors they deemed critical for teaching and learning to take place.

Researchers of online learning began questioning the theory of social presence developed by Short et al. (1976), basing their arguments on the fact that participants in online asynchronous discussions were able to project their personalities into online discussions and create social presence by using written language (Gunawardena, 1995; Gunawardena & Zittle, 1997; Tu, 2000). Gunawardena and Zittle (1997) argued for the importance of examining whether users' perceptions of the media altered their behavior or whether the actual features of the media were the causes of communication differences. They discovered that social presence could "be cultured" among online participants, a position different from the school of thought that social presence is largely a quality of the communication medium. Thus, social presence was demonstrated to be a feature of the medium and of the online learners presenting themselves "as being 'real' as well as 'connected' with others when communicating in online learning environments by doing such things as using emoticons, telling stories, and even using humor" (Lowenthal, 2009, p. 126). Consequently, a learner's perceptions of social presence and the behaviors one acquires, or that are cultured, can establish connection with others and make up for the cues that are filtered out, which are as important as a medium's supposed capabilities (Biocca, Harms, & Burgoon, 2003; Lowenthal, 2012). Social presence is a dimension produced from the communication interaction with the learner's perception deciding the degree to which social presence occurs, and the medium's influence causing fluctuating levels of social presence. Tu and McIsaac (2002) redefined online social presence via CMC as the level of feeling and reaction of being connected to another individual. According to Sung and Mayer (2012), "the fundamental nature of social presence may relate to feeling rather than reason" (p. 1738). Thus,

social presence can be thought of as the extent to which an individual feels emotionally and interpersonally connected to another individual through CMC.

Definition of Social Presence

A review of multiple studies shows social presence to be a complicated construct with a conceptualization that changes across different studies and no explicit or precise definition exists. The definition of social presence appears to be based on what researchers are trying to measure in the interaction between individuals around many different communication media that are either limiting or facilitating the observed interaction (Biocca, Harms, & Gregg, 2001; Cui, Lockee, & Meng, 2013). Social presence has been defined as: "the degree to which participants are able to project themselves affectively within the medium" (Garrison, 1997, p. 6); "the ability to make one's self known under conditions of low media richness" (Savicki & Kelley, 2000, p. 817); "the degree of person-to-person awareness" (Tu, 2000, p. 1662); "the degree to which a person feels 'socially present'" (Leh, 2001, p. 110); and "the feeling that others are involved in the communication process" (Whiteman, 2002, p. 6). Gunawardena and Zittle (1997) stated that social presence is "the degree to which a person is perceived as a 'real person' in mediated communication" (p. 9). In this definition, "the mediated other is not simply 'here or not here,' but is present to a lesser or greater degree along some definable continuum" (Biocca et al., 2003, p. 462). According to some scholars, social presence exists in degrees from basically having no presence due to a participant being absent to a low presence of simply being present to a high degree representing mutually dependent interactions, participants' representations of themselves, and understanding other's emotions and intentions (Biocca et al., 2003; Kehrwald, 2010; Lowenthal, 2010; Tu & McIsaac, 2002). Currently, definitions of social presence continue to be vague, overly broad, or circular, and tend to blur the distinction between strategies to create and

sustain social presence (learner behaviors, course design, instructor presence) and the psychological or behavioral influences of social presence (community building, collaboration, satisfaction, interaction) (Biocca et al., 2003; Chen, Fang, & Lockee, 2015). Adding to the complexity is the importance of social presence elements in establishing a sense of community among online learners (Tu & McIsaac, 2002). Intimacy and immediacy (Argyle & Dean, 1965; Wiener & Mehrabian, 1968); social context, online communication, and interactivity (Tu, 2000); awareness, affective social presence, and cognitive social presence (Shen & Khalifa, 2009); copresence, psychological involvement, and behavioral engagement (Biocca et al., 2003; Shen & Khalifa, 2009; Sivunen & Nordbäck, 2015) are some of the factors that are said to maximize social presence.

According to Lowenthal (2009), definitions of social presence tend to fall on a continuum. He argued that at one end of the continuum, social presence emphasizes an individual's perceptions of another person as being real or being there and on whether individuals project themselves in the communication environment. The other end of continuum emphasizes the existence of positive social and emotional relationships between communicators (Lowenthal, 2009).

Measurement of Social Presence

Little agreement has occurred on how to measure social presence (Cui et al., 2013; Lin, 2004; Lowenthal & Dunlap, 2013; Stein & Wanstreet, 2003). When researchers measure social presence, they appear to be measuring the changes occurring within the communication interaction and the relationship taking place between two or more individuals, or the properties of a communication medium that either limits or augments that communication. Many questionnaires have been developed based on researchers' conceptualizations of social presence,

their preferences of methods for assessing users' perceptions of social presence, and the media application being studied (Cui et al., 2013; Kreijns, Kirschner, Jochems, & Buuren, 2010). Gunawardena and Zittle (1997) developed the *Social Presence Scale (SPRES)* to measure attitudes towards a media, communication environment, and the sense of intimacy. Biocca et al. (2001) developed the *Networked Minds Social Presence* to measure co-presence, psychological involvement, and behavioral engagement. Lee and Robbins (1998) developed the *Social Identify Scale* to measure perception of self-categorization and self-identity in computer mediated group activities. Rovai, Wighting, and Lucking (2004) developed the *Classroom Community Scale* to measure connectedness, group cohesion, passion, trust and interdependence within a learning community. Swan and Shih (2005) adapted an instrument from Richardson and Swan (2003) that was modified from Gunawardena and Zittle (1997). This *Social Presence Survey* measures affective, cohesive and interactive indicators. The *Community of Inquiry* instrument was developed by Arbaugh et al. (2008) to measure open communication, group cohesion, and affective expression. Most recently, Whiteside (2015) introduced the *Social Presence Model*, which she adapted from Rourke et al. (1999) *Social Presence Indicators* include participant Knowledge & Experience and Instructor Involvement as additional elements that further our understanding of social presence.

The study of social presence initially began with an emphasis placed on the media attribute, and more recently, researchers have considered user's perceptions of their instructor, other students, academic subject, the course management system, media, tools, instructional strategies, and outcomes. Schools of thought have been evolving from research that focuses on technologies and participant behaviors to research that views social presence as resulting from student perceptions of other participants in online environments to more recently research that

views social presence as an overarching literacy for teaching and learning experiences (Swan, 2015). No matter how it is defined, social presence in online environments is assumed to be conveyed by visible activities such as posting, commenting, responding, and participation in group and community activities in a technology enhanced environment to create relationships and a level of connectedness with others (Bentley, Secret, & Cummings, 2015; Swan, 2015).

Perceptions and Manifestations of Social Presence

A review of the literature on social presence research identified a concentration of studies focused on students participating in asynchronous courses versus synchronous courses (Akayoğlu, Altun, & Stevens, 2009; (C. C. Chou, 2002; Stein et al., 2007; Swan, 2002a). According to Mannsfeld, Wichmann, Kramer, and Rummel (2013), "only a few studies in the context of learning investigate social presence in synchronous CMC, especially in terms of comparing different communication modalities" (p. 89). The online course, and most recently an online graduate program (Kumar & Ritzhaupt, 2014), has been the mainstay of the CoI studies with little research on time restricted learning events such as professional online conferences. The latest trend in mediated learning is focusing on students' perceptions of teaching, and social and cognitive presence in virtual worlds (Burgess, Slate, Rojas-LeBouef, & LaPrairie, 2010; McKerlich, Riis, Anderson, & Eastman, 2011; Pellas & Kazanidis, 2013). Using a CMC such as Second Life and OpenSim, virtual worlds are rapidly becoming popular environments for testing theories of social presence behavior (McKerlich et al., 2011; Mennecke, Triplett, Hassall, Conde, & Heer, 2011; Nowak & Biocca, 2003; Warburton, 2009). However, since the majority of current professional online conferences are neither asynchronous events nor conducted in virtual environments, the relevance of the social presence component of the CoI framework

needs confirmation with the use of synchronous communication tools in real time over a short period as experienced in professional online conferences.

Synchronous communication is thought to increase immediacy and connections between students and the teacher compared to asynchronous discussion (Duncan, Kenworthy, & McNamara, 2012; Gunawardena & McIsaac, 2004; Wheeler, 2015). According to some researchers, online synchronous communication is the best method to create dialogue due to the ability to express immediate feedback, nonverbal cues, personalization, and language diversity and thus the facility to increase social presence (Giesbers, Rienties, Gijselaers, Segers, & Tempelaar, 2009; Hrastinski, 2008; Yamagata-Lynch, 2014) by participants being present at the same time for immediate interaction. O'Sullivan (2000) commented that synchronous interaction allows for a better experience of another's presence that "generates a personal connection between instructor and students and among students" (p. 60).

Researchers have argued that social presence is one of the most important features of online learning and critical to understanding one-to-one computer mediated communication (de Bruyn, 2004; Gunawardena & Zittle, 1997; Mcinnerney & Roberts, 2004; Polhemus, Shih, & Swan, 2001; Richardson & Swan, 2003; Rourke et al., 1999; Rovai et al., 2004; Russo, & Benson, 2005; Tu & McIsaac, 2002). Without social presence, an online learner may feel frustrated, have a negative attitude towards the instructor, and exhibit lower levels of affective learning (Hample & Dallinger, 1995; Richardson & Swan, 2003). A study focusing on the affective elements demonstrated by learners participating in online courses was conducted by Sung and Mayer (2012) to identify the five leading factors of online learners' personal feelings of social presence. Using the Online Social Presence Questionnaire judged reliable, the researchers identified social respect, social sharing, open mind, social identity, and intimacy as

the five affective factors of online social presence that students perceived most important in their online courses. However, the researchers did not indicate whether the online courses were asynchronous, synchronous or blended or the type of media tools used (wikis, blogs, threaded discussions, email, audio/visual exchanges) by the instructor and students in this study. Not indicating whether a class is being taught asynchronously or synchronously has been a repeated omission by many research studies done in the last twenty years and may be due to the prominence of asynchronous online courses over those being taught in real time.

Of the research that has been conducted on synchronous classes, social presence seems to be influenced by features of the communication environment as well as by the behaviors of participants within this environment. Twelve recordings of classroom interactions using Elluminate *Live* as the webbased synchronous setting revealed that teachers and students manifest social presence through different preferences of specific tools and communication styles as well as through informal and noncurricular related attempts at social interaction (Nippard & Murphy, 2007). The researchers also revealed how teachers relied almost entirely on the audio component, used their tone of voice and volume to convey affective responses, and initiated informal efforts at social interaction while students chose direct messaging that resulted in condensed communication (e.g., acronyms, emoticons, graphical symbols), with more off topic content to convey affective and interactive responses that fostered social presence.

The use of synchronous tools like direct messaging and real-time chat are approaches that educators have been using to engage learners in the learning process and to promote connection among learners (Burnett, 2003; Cox, Carr, & Hall, 2004). Learners are more prone to use the chat tools to engage equally in informal, spontaneous discussion that supports the social aspects of the course (Dawson, 2006; Ingram, Hathorn, & Evans, 2000; Pena-Shaff, Martin, & Gay,

2001). In an online graduate course, students reported a preference for synchronous chat as compared to asynchronous discussion for providing a more effective method to build collaboration, accomplish learning tasks and for build community (Fisher & Coleman, 2001; Kitchen & McDougall, 1999). Schwier and Balbar (2002) found that synchronous communication "promoted a strong sense of community" (p. 4) amongst the learners. Online text based discussions were often enthusiastic, continuing after the scheduled class session to email discussions where participants began using their peers' names as well as emoticons (Schwier & Balbar, 2002). Synchronous chat is assumed to assist students in becoming aware of "themselves as members of a community rather than isolated individuals communicating with a computer" (Haythornthwaite & Kazmer, 2002, p. 459).

Students in chat rooms also perceive their instructors as real people when the instructor steps away from their traditional leader role to being more informal (Maggioli, 2012; Roberson & Klotz, 2001; Woods & Ebersole, 2003). Disclosing details about their personal lives to inspire deeper discussion helped instructors model to their students how to engage with one another in a meaningful way (Whiteside, 2007). Interview and artifact analysis data reveals that self-disclosure by online instructors is a key construct of teaching presence and important for reinforcing learning satisfaction (Arbaugh et al., 2008). This finding has confirmed the report of Richardson and Swan (2003) that students perception of instructor social presence is an integral component of their academic experience.

The behaviors of instructors and students within the online learning environment and the type of communication they use to manifest social presence is a complex interconnected phenomenon, which cannot be viewed as either a result of technology or of social interaction alone. As stated by Aragon (2003), "by discussing on-topic, on-content issues and off-topic,

more personal information, technology tools offer a unique method to be at a distance yet foster social presence" (p. 64). Real time chat has been found to support more responsive and more supportive interaction than in asynchronous discussions (Chou, 2001; Davidson-Shivers, Muilenburg, & Tanner, 2001). In a study comparing the three presence categories and perceived learning among students who used only asynchronous discussion tools with students who used a combination of asynchronous and synchronous tools, students indicated that synchronous audio or chat was integral for fostering social presence and social interaction (Rockinson-Szapkiw, 2009). As one attendee of an online conference commented, "I loved the chat sessions. [They] really made me feel much more connected…[A]fter one session…a bunch of us moved over to the [virtual] lounge and continued our chat' " (Bell, 2011, para. 13).

Synchronous chat, however, cannot compete with synchronous audio, according to studies looking at perceptions of social presence in synchronous communication via chat in comparison to audio or audio-video (Bente, Rüggenberg, Krämer, & Eschenburg, 2008; Salinäs, 2002). This supports Short et al. (1976) conclusion that the less social cues are transmitted via synchronous communication methods the less social presence is perceived. A study that investigated whether differences in communication modality (chat vs. audio vs. audio-video) would affect social presence and motivation in a blended learning seminar concluded that "CMC expertise was an intervening factor that supports the perception of social presence and becomes more important if communication occurs via chat in comparison to audio/video, whereas communication modalities did not directly affect the perception of social presence" (Mannsfeld, et al., 2013, p. 91). This stands in contrast to the arguments Short et al. (1976) made and previous results from laboratory studies (Bente et al., 2008; Sallinäs, 2002). Therefore, this study did not attempt to compare attendees' social presence via their chat discussions with presenters' social

presence via their audio discussions, as the modalities of communication were very different. Attendees were asked about their perceptions of the presenter with questions that specifically measured presenter involvement as a social presence indicator.

The Influence of Social Presence

Researchers are in agreement that social presence is a powerful model to use for online teaching and learning environments because of its strong influence on teaching and learning success (Bentley et al., 2015), on students' satisfaction (Picciano, 2002; P. Shea, Pickett, & Pelz, 2004; Swan & Shih, 2005), and on students' participation and engagement (Cobb, 2009; Cui et al., 2013; Garrison & Arbaugh, 2007). The capacity of social presence to influence learning, motivation, engagement, interaction or satisfaction of presenters and attendees in an online conference is not well investigated. The concluding remarks in many recent studies are that further study of the CoI framework or the various social presence measurements needs to be conducted in other types of online learning environments and to examine the impact of emerging technologies on social presence (Cobb, 2009; Elwood, McCaleb, Fernandez, & Keengwe, 2012).

Tu (2000), linking social learning theory to social presence, claims that social presence "is required to enhance and foster online social interaction, which is the major vehicle of social learning" (p. 27). Swan and Shih (2005) confirmed a strong correlation between students' perceived social presence and perceived learning as well as between perceived presence of instructors and satisfaction with the instructor. Social presence is also associated with academic performance and the level of satisfaction of the students (Garrison & Arbaugh, 2007; Gunawardena & Zittle, 1997; Hostetter & Busch, 2006). It is an important precursor, along with teaching presence, collaboration and productive discussions (Bangert, 2008) and has been

deemed important for communication and collaboration in online learning environments (Oztok et al., 2013).

Most of the literature pertaining to social presence has focused on individual academic courses and graduate programs taught online, however scant evidence exists in the literature that social presence has been applied to professional online conferences. Social presence has been focused on the level of connectedness among students and teachers in higher education, rather than a wider consideration of attendees and presenters who make up educational conferences. Kumar and Ritzhaupt (2014) studied three years of an online doctoral program, Lee (2014) explored two graduate hybrid courses during one 15-week semester and (Swan, 2002a) and Tu (2002) explored a one-semester online course. However, unlike semester long courses or programs that last for several years, professional online conferences are intense social-learning experiences comprised of numerous 20 to 45 minute sessions lasting no more than a week. Attendees and presenters of professional online conferences do not have the much time to learn, interact, disseminate new ideas, engage in meaningful discussions, and cultivate interpersonal relationships with the conference's online community of learners. According to Lowenthal et al. (2009), the amount of time instructors and students spend communicating online should influence how social presence is developed, sustained, and perceived yet often this detail is overlooked or not adequately investigated in research on presence. Social presence over time was analyzed in transcripts from a graduate course using asynchronous and synchronous formats with 16 students (Akyol & Garrison, 2008). No statistical significance was found for the effect of time on social presence as a whole.

Professional online conference attendees and presenters require skills to be competent online learners and presenters, and must modify behaviors from the traditional in-person

conference to fit the environment of an online conference. “When measuring social presence, the time taken to build social presence among a community of learners and the role of different communication media has to be considered” (Kumar & Ritzhaupt, 2014, p. 67). Thus, the time it takes and the details of this adjustment process for attendees and presenters to a new delivery method may be useful factors to investigate in future studies.

Terminology such as ‘communities of inquiry’, ‘virtual communities’, ‘communities of learners’, and ‘knowledge-building communities’ has developed around the phenomenon of online courses. Recently, Garrison (2009) redefined social presence as “the ability of participants to identify with the community (e.g., course or study), communicate purposefully in a trusting environment, and develop interpersonal relationships by way of projecting their individual personalities” (p. 352). In this light, the term “community” has a strong relationship to presence and refers to a number of people who belong to a social group, which could include participants in a professional online conference. However, community is a concept that has yet to be operationalized (Herring, 2008; Preece & Maloney-Krichmar, 2005). Attempts have been made to develop and apply theories that explain what is being observed in online groups while many scholars refer to all groups of people interacting online as communities without further explanation. “An important challenge facing Internet researchers is thus how to identify and describe online phenomena in culturally meaningful terms, while at the same time grounding their distinctions in empirically observable behavior” (Herring, 2004, p. 338). At a 1996 workshop, a group of academics developed the following core characteristics of online communities:

- Members have a shared goal, interest, need, or activity that provides the primary reason for belonging to the community.

- Members engage in repeated, active participation and there are often intense interactions, strong emotional ties and shared activities occurring between participants.
- Members have access to shared resources and there are policies for determining access to those resources.
- Reciprocity of information, support and services between members is important.
- A shared context of social conventions, language, and protocols exists (Whittaker, Isaacs, & O'Day, 1997, p. 137).

In a study investigating five consecutive years of the TCC Conference, post hoc questionnaires were used to answer questions about participants' experiences and perceptions over time, including if a virtual conference environment promoted a sense of belonging to a community of learners (Ho, Kimura, & Boulay, 2011). Positive responses indicated conference participants experienced a strong sense of community. However, no further information was captured on how participants experienced the sense of community, what they were doing to build this sense of community, if presenters or conference organizers were supporting the process, and how the CMC and other social media tools were working to help or hinder in the process of developing interpersonal relationships that supported the social aspect of the conference. To investigate detailed information on the benefits and limitations on participants during their online participation as well as the impact of the conference on personal learning and potential future practice, Murphy and Reushle (2012) distributed an online evaluation questionnaire at the end of an online conference. They discovered that survey respondents found online conferences to be appealing experiences for exploring new learning ideas, remaining current with the latest educational technology trends, networking with peers in similar fields, and feeling a sense of

community. However, the manner in which participants engaged with online sessions was not evident, including the extent to which they actively participated and collaborated with peers in the synchronous environment.

Studies have emphasized the importance of community as a component in successful online and hybrid learning (Haythornthwaite & Kazmer, 2004; Rovai et al., 2004), while a feeling of community is found to be significantly associated with perceived learning (Shea, Sau Li, & Pickett, 2006; Shea et al., 2006; Wighting, 2011). According to Palloff and Pratt (2001), developing an online learning community should be the ultimate goal in online education. If not the ultimate goal, it may be one of several objectives in professional online conferences, as testified by a participant in an early TCC Conference who experienced community building. "Much like a body of like-minded colleagues anywhere, the personalities of the group emerged slowly over the three days of the conference" (Kirkpatrick, 1996, para. 10) and continued after the conference with participants connecting with each other for both academic and professional endeavors. Jacobs and McFarlane (2005) concluded that learning can be compared with knowledge-building and a conference is an example of a knowledge building community, albeit a short-lived one.

Conceptual Framework

The CoI framework, specifically the social presence component, as well as literature reflecting the purpose of and experiences by attendees and presenters of professional online conferences, facilitated the research intentions of this study. The CoI framework is a popular theoretical framework to understand social presence according to many researchers who have used it in their work to study teachers and students in online learning courses (Arbaugh, 2007;

Delfino & Manca, 2007; Lomicka & Lord, 2007; Nippard & Murphy, 2007; Rourke & Anderson, 2002; Swan et al., 2008).

Examining social presence within a professional online conference setting appears to be warranted. If, as Dumitru (2012) asserts, a community of inquiry is a group of experts gathered to examine a topic of common interest through investigation based on open discussions, then professional online conferences may be an appropriate setting to study the CoI, and specifically social presence. "The immersive environment provided through online conferences helps create social presence and gives adult learners a more communal experience for unique learning opportunities" (McWhorter et al., 2014 p. 278, citing Mancuso, Chlup, & McWhorter, 2010). Yet, empirical information that investigates the perceptions and experiences of presenters and attendees with respect to online conferences is lacking. More context specific studies are suggested to help understand the type of participants, quality of interaction, research discussions, and continuity of relationships enabled through online conferences, particularly with the use of social media and other relevant technology (Malik, 2011).

Emotional Expression, Open Communication, and Group Cohesion were the three social presence categories initially developed by Garrison et al. (2000) that were followed by specific indicators of social presence (e.g., use of humor, continuing a thread, or the use of vocatives) (Rourke et al., 1999b) to help identify behaviors of social presence in CMC. The categories and indicators of social presence were renamed and tested for validity (Rourke et al., 1999b). Scholars like Swan (2003), Hughes et al. (2007) and Lowenthal (2012) continue to adapt and expand the indicators even further. The most recent addition to the categories was introduced by Whiteside (2007, 2015) in a study first conducted in a hybrid learning environment and most recently on a 13-month graduate-level certificate program. Known as the *Social Presence Model*,

the working model proposes the existence of five integrated categories that compromise social presence, including: Affective Association, Community Cohesion, Instructor Involvement, Interaction Intensity, and Knowledge & Experience (Whiteside, 2015). According to the researcher, two new categories, Knowledge & Experience and Instructor Involvement, were added after the coded data from her study showed a discrepancy in social presence, specifically in the interview transcriptions and observation notes. The additional Knowledge & Experience category supports an earlier study conducted by Lui et al. (2007) in which expertise presence was unveiled as an element of the CoI framework to describe the "persistent contribution of knowledge relevant to the purposes of the computer conferences" (p. 1024). In Whiteside's (2015) definition, the Knowledge & Experience category sees a group's "collective experience and knowledge level" (p. 14) increasing the potential connections made among the participants, which increases the level of social presence. This could serve as a relevant category in professional online conferences to understand the discussions that transpire between presenters and attendees who come from all over the world, with varying degrees of educational backgrounds representing numerous organizations and universities.

The Instructor Involvement included in the *Social Presence Model* refers to "the extent to which the instructor(s) is an invested, active partner in the learning community" (Dikkers, Whiteside, & Lewis, 2013, p. 23). Research has shown that active participation of the instructor within their course is a critical component in how satisfied and how well students do in their online course (Mandermach et al., 2006; Picciano, 2002; Swan & Shih, 2005). According to Hung and Chou (2015) in their study examining students' perceptions of instructors' roles in blended and online learning environments, special attention should be focused on online instructors' role as social supporters. Social supporters are instructors who perform the role of

discussion facilitators or "cheerleaders," to promote student interaction, help foster a sense of community, and establish an amicable learning environment in the course (Hung & Chou, 2015). Students want more social presence from their instructors and are not satisfied with instructors who only have teaching and cognitive presence in class. The greater use of social presence is seen in how they communicate with their students, with "more acknowledgement, use of first names when appropriate, a sense of being part of the community, and expressions of gratitude" (Ladyshewsky, 2013, pp. 13–14). A modification to the CoI framework to include an instructor social presence has also been suggested by other researchers (Pollard, Minor, & Swanson, 2014; Swan & Shih, 2005).

In the context of this case study research, understanding the role of presenters and their social presence in an online conference warrants further exploring the category of Instructor Presence. Like instructors, conference presenters have a powerful and positive effect on attendees' learning. Conference presenters should aim for deep learning where attendees relate and extend the ideas and make relevant meaning of the content, and create an optimal, safe, education environment (Hurt, 2011).

Social Presence Indicators

Responses that are affective refer to the display of emotional closeness, warmth, and openness among participants in the expressions used and personal information disclosed. Because the context for attendees in the TCC Conference sessions is completely text based, indicators of affective expressions are based on expressions of emotions, use of humor, and self-disclosure. Interactive responses are demonstrated by the ways in which session attendees respond to each other. If a connection exists from one post to the next through a clear reference or through a direct reply or quote, then interactivity exists among attendees. The formal

indicators are "continuing a thread, quoting from others' messages, referring explicitly to others' messages, asking questions, complimenting, expressing appreciation, and expressing agreement" (Lowenthal & Dunlap, 2013). Finally, cohesive responses refer to those behaviors that display a sense of community and commitment among group members. The indicators, according to Rourke et al. (2001) are vocatives, using inclusive pronouns, and phatics and salutations. In this sense, social presence manifests as feelings of belonging to the community and identifying with other participants of the community.

Using Whiteside's (2007, 2015) *Social Presence Model* to study the social presence of presenters and attendees allows for a more robust analysis of how social presence is manifested in the volume and patterns of interaction in a professional online conference. Table 1 displays Whiteside's (2015) *Social Presence Model* that was adopted and adapted to study the social presence of presenters and attendees in a professional online conference.

Table 1

Social Presence Model

Category	Code	Definition
Affective Association		
	Emotion	Employs conventional expressions of emotion, or unconventional expressions of emotion.
	Humor or sarcasm	Involves teasing, cajoling, irony, understatements, and/or sarcasm.
	Paralanguage	Features text outside formal syntax used to convey emotion (e.g., emoticons, emojis, excessive exclamation, and ALL CAPS).
	Self-Disclosure	Presents details of life outside of class, and/or expresses vulnerability.
Community Cohesion		
	Offers Help	Participant provides additional readings, URLs, or other resources to help another participant or the entire group. May double code with Additional Resources.
	Greetings or Salutations	Uses communication that serves a purely social function: greetings, closures.
	Group References	Addresses the course community as we, us, or our.
	Social Sharing	Shares information relating to their work and/or home life. Also includes phatics, or expressions of good will.
	Vocatives	Addresses or refers to participants by name.

Category	Code	Definition
Interaction Intensity		
	Acknowledgement	Quotes or refers directly to a classmate or instructor.
	Compliments or Agreement	Compliments others or agrees with the contents of others' messages.
	Disagreement	Responds to others in disagreement. Could be respectful.
	Inquiry	Asks questions of other students or the moderator. Or requests ideas from students without asking questions.
Instructor Involvement		
	Response to student	Instructor responds direct to a specific student or to a specific thread among several students.
	Class Contribution	Instructor provides a contribution to the whole class. Does NOT include instructions – See Instructor-Led Instructions.
	Instructions	Instructor provides instructions to get students started on the course assignment
	Redirect	Instructor redirects the course discussion to get it back on topic.
	Digression	Instructor adds a social or slightly off-track contribution.
	Reference to Instructor	Students reference the Instructor's comments, instructions, or background or knowledge. May include dual code other subcodes in this section.
Knowledge & Experience		
	Academic	Student refers to prior knowledge or experience from an academic course experience. In this project, they might refer to a course they took in a traditional format and compare it to the blended experience.
	Level	Makes reference to the level of experience or knowledge. Could refer to advanced knowledge in the specific or closely related subject area. Or refers to not having a great deal of background in the subject area.
	Personal	Students refer to experience outside of academic and work experiences that they bring to prepare or thrive in the learning experience.
	Professional	Refers to a work or training experience outside the academic experience. For example, a student may refer to a training experience or other work or professional experience.
	Additional Resources	With a reference to their prior knowledge or experience, an instructor or student provides additional resources aimed at extending knowledge. May double code with Offers Help.

Note: Whiteside, A. L. (2015). Introducing the Social Presence Model to Explore Online and Blended Learning Experiences. *Online Learning*, *19*(2), p. 5.

Online Communities

In their review of the CoI, Garrison and Arbaugh (2007) documented the issues and challenges associated with its evolution. The researchers asserted the need for further research to

learn more about the fundamental influence of social presence under various educational methods that vary according to specialty, goals, learners, and communication media. This research explored a community of inquiry experience and perceptions of social presence by participants (both presenters and attendees) in a three-day professional online conference. Of the scarce literature that describes the phenomenon of professional online conferences, the goal of these Internet-based events is to foster learning and to engage and sustain participation by creating online communities among the conference participants (Anderson & Anderson, 2010; Johnson & Tremethick, 2009; Kimura & Ho, 2008; Murphy et al., 2012). Online communities are "social aggregations that emerge from the [Internet] when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace" (Rheingold, 1993). Clouder et al., (2011) described an online environment as being "an ideal vehicle for interprofessional dialogue" as it has the potential of bringing together professionals from across a vast geographic area (p. 112).

Similarly, people attending professional online conferences use computers to communicate with one another while never having any physical contact to build the normal interpersonal relationships that occur in face-to-face conferences. Thus, various guides and manuals have been published describing the elements necessary to achieve knowledge building within a community of learners (Anderson & Anderson, 2010; Green, 1998; M. Johnson & Tremethick, 2009). In one of the earliest guides to organizing online conferences, Green (1998) discussed the importance of "creating a community" (p. 15) by getting people to interact with the presenter and with other participants to form an online community. Kimura and Ho (2008) assert that a sense of community among peers has consistently been achieved due to the use of multiple modes of communication and interaction in both real-time and on-demand, while Murray (2002)

attributes it to design, engagement, and facilitation during the online conference. This resembles the community formation and networking in professional online conferences that Siemens et al., (2008) attribute to the influences of increased openness, two-way dialogue, and blurred distinctions between the presenters and the learners. Whiteside's (2015) *Social Presence Model* was used for this research to study professional online conferences and Community Cohesion was included as a category to explore the degree to which the online participants formed a community.

The concept of professional conferences is bound up with notion of hotel sites and physical convention halls. Consequently, how can community be built in a virtual space, through a medium that is traditionally described as "lean," without the ability to broadcast the full range of verbal and non-verbal cues necessary to support strong social presence? And once in the arena of the Internet-based conference, how can organizers and presenters move beyond merely delivering content to remote attendees toward building a community among them? This research explored the professional online conference (i.e., TCC Conference) as a community of inquiry where participants are acting as active thinkers rather than passive learners in a supportive, collaborative learning environment. The application and evaluation of an expanded CoI framework to a professional online conference was a contribution of this research to the field and specifically to the understanding of social presence. This dissertation intends to help extend social presence research to an entirely new educational CMC, that of a professional online conference, and to help us learn about social presence among presenters and attendees within a professional development setting.

Chapter Summary

The chapter provided a review of the literature, which dealt with: (a) Conferences; (b) Professional Online Conferences; (c) Community of Inquiry Framework; (d) Social Presence; (e) Defining Social Presence; (f) Measuring Social Presence; (g) Perceptions and Manifestations of Social Presence; (h) the Influence of Social Presence; and (i) a Conceptual Framework. It discussed the history of conferences in general and professional online conferences in particular. The literature review also defined social presence as the sense of community that the learners feel in an online learning community and concluded that social presence is of particular importance as an influencing element in an online learning community.

Social presence was addressed, and as were the perceptions and manifestations of this element in online educational environments. However, few studies have examined the effect of social presence in professional online conferences. Incorporating social presence into professional online conferences presents an opportunity to develop a learning atmosphere. It was therefore imperative to examine the perceptions of social presence and what, if any, influence it had on the conference experience. The following chapter covers in detail the methodology that was used for this study, including information on how the participants were selected, data collection procedures and data analysis.

CHAPTER 3. METHODOLOGY

Research has demonstrated that a student's perception of learning, interaction and satisfaction in online courses are strongly influenced by social presence (Garrison, 2007; Richardson & Swan, 2003; Swan & Shih, 2005). The experience of social presence has also been found to decrease frustration and increase affective learning in computer-mediated classrooms (Hample & Dallinger, 1995). However, very little research has been done concerning other learning contexts where social presence could exist or in further understanding and defining the cues and expanding the components of social presence within these contexts. Although social presence has been considered to be intrinsically interrelated with both cognitive presence and teaching presence, in Garrison, Anderson and Archer's (2000) Community of Inquiry (CoI) framework, this study focuses on social presence only.

The purpose of this explanatory multiple-case study is to examine the single phenomena of social presence as measured by audio and written communication and interaction in multiple sessions during a professional online conference. Yin (1999) emphasized that each case may be comparable to a single experiment and therefore multiple cases could be viewed as equivalent to multiple experiments. Likewise, Johnson and Christensen (2012) suggested that investigating multiple cases might result in a more effective study because of the comparisons and differences that can be made between the cases. Multiple-case study research was explored here using both quantitative and qualitative methods to understand social presence, while examine similarities and differences between cases to increase reliability and rigor.

In an effort to triangulate data for the purposes of verification, validity, and reliability, the researcher utilized a variety of information collection methods after obtaining IRB approval, including transcript content analysis, an online questionnaire, and online interviews. Data for this

study were collected from a small group of attendees and presenters who were participants in an annual professional online conference. This investigation was facilitated by research grounded in the CoI framework. Furthermore, a conceptual framework based on the work by Arbaugh et al., (2008); Garrison, Anderson, and Archer, (2000); Rourke et al., (1999); Swan and Shih, (2005); and Whiteside (2015) provided the foundation for organizing, collecting and analyzing the data. By delving into the topic utilizing "how" questions particular to case study research, as well as including varying collection methods, the research explored this contemporary educational phenomenon within the boundaries of its context.

This chapter describes the methodology used for this study, and includes the research design, the role of the researcher, descriptions of the participants and the setting, data collection and analysis procedures, and the methods engaged in to validate the findings and reliability of this study, as well as the ethical measures employed to protect the rights of the participants involved in this study.

Research Questions

Research questions help narrow the focus of a study by providing a framework, organizing the research and its meaning, providing direction and consistency, keeping the research focused throughout the investigation, and unearthing the type of data that were collected (Cresswell & Plano Clark, 2007; Onwuegbuzie & Leech, 2006). The following research question guided this explanatory study:

Research Question 1: How is social presence manifested in the volume and patterns of interaction in a professional online conference?

Research Question 2: How do attendees and presenters perceive social presence in a professional online conference?

Research Question 3: How does social presence influence the conference experience of attendees and presenters in a professional online conference?

Protection of Participant Rights

Prior to initiating the study, consent to proceed was obtained from the University of Hawaii's Human Studies Program (Approval #23729) to ensure the protection of participants' rights. An application was submitted to the IRB describing the comprehensive activities in the research process and how the participants' rights to respect, beneficence, and justice would be maintained (Creswell, 2012). These activities posed no known risk to the participants and the study population was not considered to be of high risk (Creswell, 2012). The university approved the application and the study was granted exempt status (see Appendix A).

The Board of Directors of TCCHawaii.org, a non-profit organization that produces the annual TCC Conference with other partners, granted permission on January 4, 2016 for the graduate researcher to ask all presenters accepted for the conference whether they were interested in voluntarily participating in a graduate research study (see Letter of Support in Appendix B and Presenter Notice in Appendix C). Once consent was granted by the presenters regarding their sessions being part of the study, notification was provided to all attendees informing them that specific sessions were part of a potential research project involving content analysis of recorded sessions (see notifications placed in the conference schedule in Appendix D and attendee recruitment and consent in Appendix E). Attendees could voluntarily choose to participate in the research by providing consent via a link that was placed on the web page of the sessions that were part of the study.

The presenters participating in the study were provided with more detailed information about this study, including the request to post a voluntary survey that session attendees could

respond to at the conclusion of the session and a request to interview the presenters, along with consent information. Presenters were asked for their voluntary participation in these activities in addition to the session recordings. Presenters responding in the affirmative consented to participate (see Appendix F for a copy of the consent forms for presenters).

Three methods of data collection were planned for the study. First, participants (presenters and attendees) in all the TCC Conference sessions were asked to voluntarily complete an online survey immediately after the conference session ended (see survey in Appendix G). All participants were instructed about their right to withdraw from the study at any time and were notified that participation was completely voluntary. Participants were assured that participation in the study would not have any adverse impact on their conference experience and that the confidentiality of their individual responses would be maintained. The survey included some basic demographic information (gender, age, number of TCC Conferences attended, and profession) and a set of questions designed to measure social presence adapted from surveys by Arbaugh, Cleveland-Innes, Diaz, Garrison, Ice, Richardson, Shea and Swan (2008), Gunawardena and Zittle (1997), and Swan and Shih (2005) (author approval for use of survey in Appendix H). Data were analyzed using descriptive statistics.

Second, the conference organizers (TCCHawaii.org) automatically record all live sessions in the TCC Conference as part of the normal conference procedures. Presenter and attendee activities, including shared applications, whiteboard content, chat posts, as well as all audio were recorded. Permanent access to these session recordings are provided on the TCC Conference web site so that registered participants can watch the sessions that are most pertinent to their interests and access other sessions virtually any time they log on. The text-based and audio communication for the sessions where presenters agreed to participate was analyzed using

quantitative analysis, including word count and linguistic analysis, transcript content analysis, and constant comparative analysis.

Third, one-to-one interviews of presenters and attendees were done a week after the TCC Conference ended. Prior to the start of the interviews, participants were again read their rights as volunteers in the study and assured of their anonymity. Semi-structured interviews based on questions developed for students by Swan and Shih (2005) were used for attendees and questions developed for instructors by Stone and Chapman (2006) were used for presenters (see Appendix I and Appendix J). Each interview was anticipated to last approximately 30 minutes. Interviews were conducted via Blackboard Collaborate and audio recorded using Blackboard Collaborate's recording function. The recordings were transcribed verbatim and analyzed using qualitative constant-comparison methods.

The researcher took the following steps to ensure data security. Data collected by the conference delivery system is being kept on a server protected through firewalls and with encryption. Data collected from the questionnaire and interview transcriptions were transferred to a secure and encrypted file storage system on the researcher's Apple Mac computer via FileVault, which allows for full disk encryption. Data will be stored for five years.

Research Design

This research was conducted as a multiple-case study, examining social presence in the computer mediated communication environment of a professional online conference. In his writings about choosing a research strategy, Yin (1994) states that a specific research strategy has distinct advantages in certain situations. In terms of the case study, it is focusing on a topic that is suitable to in-depth analysis in a natural setting using multiple data sources (Hancock & Algozzine, 2006).

Case studies involve a method of conducting research that facilitates observing and researching a particular phenomenon within its setting using a variety of data sources. This ensures that the phenomenon is explored through a variety of lenses that allows for different facets of the issue to be revealed and understood (Baxter & Jack, 2008). As Merriam (1998) points out, "a case study design is employed to gain an in-depth understanding of the situation and meaning for those involved. The interest is in the process rather than the outcomes, in the context rather than a specific variable, in discovery rather than confirmation" (p. 19).

Some differences exist in how researchers distinguish a case study methodology. In the past several decades, case study research has produced more than two dozen definitions of this methodology, each with its own particular focus and direction for research (VanWynsberghe & Khan, 2008). Some researchers think of the case study as the object to be studied (Stake, 2000), while others define case study as a process of investigation (Creswell, 2002). More specifically, Creswell (2002) defines case study as "a problem to be studied, which will reveal an in-depth understanding of a 'case' or bounded system, which involves understanding an event, activity, process, or one or more individuals" (p. 61) whereas (Yin, 1999) defines a case study as "an empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (p. 1211). For this study, the definition proposed by VanWynsberghe and Khan (2008), who define case study as "a transparadigmatic and transdisciplinary heuristic that involves the careful delineation of the phenomena for which evidence is being collected" (p. 2), was used. In other words, case studies can be used across research paradigms and disciplines, with no particular disciplinary preference, through an approach that focuses the researcher's learning, construction, discovery, or problem solving on locating the specific unit of analysis.

VanWynsberghe and Khan (2008) provided seven features of the case study, citing other seminal scholars like Eckstein, 2002; Lincoln and Guba, 2000; Merriam, 1998; and Yin, 2004, in developing their comprehensive list of features. They suggest case studies as having these common features: (a) small sample size; (b) highly detailed contextualized analysis of an event; (c) little control of behavior, organization or events taking place; (d) comprehensive explanation of a specific temporal and spatial boundary; (e) working hypothesis generated during data collection and analysis in the case study; (f) multiple data sources, and (g) an extended understanding of the event (meaning one discovered phenomenon can lead to another resulting in an "extended" understanding of the event). A multiple-case study appeared to be the best methodology for this research because it analyzed and facilitated understanding of social presence in an online professional conference: (a) within six sessions; (b) giving the reader a sense of "being there" by providing a highly detailed, contextualized analysis of the sessions; (c) over which the researcher had little control over the events taking place; (d) providing a detailed description of the 45-minute sessions over the three day conference; (e) while the experience being investigated emerged throughout the course of the study; (f) using transcript content analysis, a questionnaire, and interviews as the primary data collection tools; (g) that hopefully lead to other research into this complex social phenomenon.

The use of six presentations spanning three days of the conference enabled the researcher to explore similarities and differences within and between cases (i.e., cross case analysis). Five sessions were 45-minute presentations and one session was a 20-minute presentation. For ease of discussion, they were named Case A through Case F in this study. With replication, a theoretical framework was developed that stated the conditions under which the social presence phenomenon was likely to be found or the conditions when it would not likely be found.

Yin (2014) concluded that 'how' and 'why' research questions are more explanatory and lead to the use of case studies for investigating the relationships that are proposed between components of a theory. He describes the role of explanatory case study design is to test theory and allow for adaptation of the theory if inconsistencies or contradictions between a preliminary theory and the evidence are discovered. This study was designed as an explanatory case study that tested the "how" and "why" of social presence theory with participants in a professional online conference, thus going beyond a descriptive study. Testing theory provided an opportunity to determine the level of support for the theory from the evidence. Although case studies do not have statistical generalizability, because of the small sample size of the population, explanatory case studies have analytic generalizability due to the links between theory and evidence (Yin, 1994).

This explanatory case study also involved a qualitative and quantitative research approach using multiple data sources. Research that uses multiple methods has become more common over the last several years with an increasing number of researchers using this approach to undertake their studies (Azorín & Cameron, 2010; Collins, Onwuegbuzie, & Sutton, 2006; Mayoh & Onwuegbuzie, 2013). However, the majority of research on online learning has utilized either qualitative or quantitative methods, thus missing an opportunity to investigate a broader spectrum of research problems (Lowenthal & Leech, 2009). Researchers such as Donnelly and Gardner (2011), Gunawardena, Lowe, and Anderson (1998), and Lowenthal and Leech (2009), have argued the importance of using various methods to gain a comprehensive understanding of what is happening when studying online learning environments. Therefore, to uncover the richness of data and maximize the interpretation of the findings (Collins, Onwuegbuzie, & Sutton, 2006; Onwuegbuzie & Leech, 2004), this study uses multiple methods,

such as word count and linguistic inquiry, transcript content analysis, constant comparative analysis, a questionnaire, and interviews as the data collection tools. It also allows for multiple perspectives, including conference attendees, the presenters, and the researcher.

The researcher analyzed the types of communication participants engaged in during the online conference presentations through initial chat messages and responses to the postings of others, as well as presenter interaction with attendees via verbal communication and non-verbal actions. The categories and indicators for social presence suggested by Garrison and Anderson (2007) in their book *E-Learning in the 21st Century* and those proposed by Whiteside (2007, 2015) were used as a framework for analysis of all forms of communication. Attendees and presenters were also surveyed to explore and understand their perceptions of social presence.

A multiple method research strategy was most appropriate for this study and was used for the majority of the data collection. The research design used the following modes of data collection: (a) transcripts from recorded conference sessions, (d) survey questionnaire, and (e) interviews. All data collection took place electronically, and all are stored safely and securely for future review. Qualitative and quantitative data were analyzed and interpreted at the case level as well as across cases in order to highlight meaningful similarities, differences, and session-specific experiences.

Participants and Context

Sampling Scheme

Since the purpose of this study was to obtain insights into a phenomenon (i.e., social presence in a professional online conference) rather than to generalize to a population, a focus on transferability rather than generalizability was important (White & Marsh, 2006). Onwuegbuzie and Collins (2007) and Garrison et al., (2006) assert that a purposeful sample should be used in

such situations. Purposive sampling is also the most commonly used method in transcript content analysis (Elo et al., 2014; Gerbic & Stacey, 2005). The complex nature of the entire conference proceedings offers too large a sample to study since all participants may not consent. Thus, a purposeful sampling was conducted for this study, as it allowed the researcher to select information-rich examples of both sessions and participants within the online conference experience. "The concern is not how much data were gathered or from how many sources but whether the data that were collected are sufficiently rich to bring refinement and clarity to understanding an experience" (Polkinghorne, 2005, p. 140). Hence, various methods were employed to study social presence from all available perspectives in the transcripts, questionnaire and personal interviews thereby achieving a greater understanding of this phenomenon.

Sample Size

No sample guidelines appear to exist that inform academics how to determine representative samples and the appropriate sample size when examining online content. According to Elo et al., (2014), the sampling method in qualitative content analysis studies is hardly ever mentioned. He suggests this is due to a lack of a commonly accepted sample size, which is different across studies and dependent on "the purpose of the study, research questions, and the richness of the data" (2014, p. 4). Typically, decisions need to be made about who or what is sampled, what form the sampling should take, and how many people or sites need to be sampled for content analysis of online content (Creswell, 2013). Also, sampling methods vary depending on the specific research questions being studied (Kim & Kuljis, 2011). In the design of case studies, however, Creswell (2013) does suggest collecting extensive details about a few

sites or individuals. He provides observations and some recommendations of a sample size at no more than four to five cases.

Investigations of social presence has mostly been conducted in asynchronous environments with data collection typically occurring for one semester or one term (approximately three to four months) (Akayoğlu et al., 2009). Lowenthal (2012), in his review of the content analysis studies, argues that, "social presence researchers who study online course discussions historically only analyze a small sample of course discussions" (p. 65).

For this study, every chat message (from consenting attendees and presenters) that occurred in six online conference sessions was analyzed using transcript content analysis. The six online sessions spanned the three-day conference. Four sessions took place on the first day; one session took place on the second day and one on the third day. Based on the results, two specific sessions were identified—one with the highest social presence indicators and one with the highest social presence density score—and analyzed using constant comparison analysis in an effort to explore deeper into the phenomenon of social presence. For the purpose of this study, all discussions occurring in the chat box were referred to as 'chat messages' or 'chat posts'. With the focus on six general conference sessions (rather than regional, keynote or student presentations), the researcher targeted one presenter and all attendees from each case. Some researchers suggest a maximum of 12 – 15 cases (Hedges 1985; Miles & Huberman 1994; Ellram 1996) for reasonable data generation. Miles and Humberman (1994) note that qualitative cases can be thought of as individual persons, groups, organizations, programs and cultures. In this study, the target was to study all the individuals participating in the six general presentations.

Survey data were collected from a convenience sample of 51 participants during the 2016 TCC Conference. A sample size for a finite population of 1,010 registered conference

participants would ideally have generated 278 respondents with a confidence level of 95% and a margin of error of 5% (Krejcie & Morgan, 1970). However, this was not a typical online survey that allowed participants to respond on their own time and at their own pace with multiple reminders. The survey was designed to be answered at the end of the presentations that were a part of the study, limiting the maximum sample size those attending six presentations. Although the researcher had previously contacted the moderators facilitating the six presentations about their willingness to announce the study and provide a link to the survey before and after the presentations, the researcher could not send follow-up reminders once the conference was underway. Thus, ensuring that the survey was administered in a manner that would have generated the most numbers of returns was not possible.

In depth interviews were conducted with a sample of 19 participants. As the interviews were linked to the survey, a convenience sample was the only means available to the researcher. Only those who had provided consent to be interviewed from a request made from within the survey were contacted. Interviews were conducted a week after the conclusion of the 2016 TCC Conference.

Study Setting

The TCC Conference, founded in 1996, was identified as an appropriate sample for this study because it brings together faculty, student, academic support staff and counselors, student services personnel, and administrators at universities and colleges around the globe (Ho, Kimura, & Narita, 2006). Participants were expected to be motivated to participate in this online conference for the purpose of professional development, as a class or program requirement, and for the content provided in the sessions and keynote presentations (Castro, 2015). The TCC Conference ran on a real-time schedule, with a starting date and a closing date, usually three days

long using Blackboard Collaborate and Adobe Connect, two web-conferencing platforms. During the three-day conference, sessions were presented in various formats. Presentations were in the form of a forum, a live 20-minute or 45-minute interactive session that may be accompanied by slides, web tours, a shared whiteboard, or multimedia, including audio and video segments that engaged the audience in a highly interactive manner. Attendees interacted with the presenter(s) using tools such as a whiteboard, chat messaging, voice, and polling. Other formats included panel discussions, roundtables and workshops.

The organizers of the TCC Conference accepted papers and general session proposals related to learning, design and technology, online learning communities, social media, mobile learning, and professional development.

Instrumentation and Procedures

This study began by exploring the recorded sessions of the 21st annual TCC Conference, followed by results of a survey and transcripts from interviews with participants. Using multiple data sources served as a form of triangulation, which allowed the researcher to see the context from multiple angles and to confirm findings between two or more data sources. Each method has its strengths and limitations, shedding light on different facets of the research topic. Therefore, by using word count and linguistic inquiry, transcript content analysis, constant comparative analysis, a questionnaire and interviews, the researcher was able to gain a broader perspective of the actual level of social presence in each of the online conference sessions and add to the internal validity of the study as recommended by several researchers (Garrison et al., 2006; Hoepfl, 1997).

The TCC Conference collected computer-mediated data generated in the recorded sessions. Such data are easy to gather, given the archiving capability of Blackboard Collaborate,

and they are a potentially rich source of insight into human behavior. The first research question was analyzed using data retrieved from: (a) linguistic inquiry and word count, (b) transcript content analysis, and (c) constant comparison analysis (see Table 2).

Table 2

Research Question 1: How is social presence manifested in the volume and patterns of interaction in a professional online conference?

Data Analysis	Type of Data	Purpose of Results
Word Count (Quantitative)	Chat discussions	Explore the linguistic inquiry and frequency of most frequent words used
Transcript content analysis (Quantitative)	Chat discussions	Explore the frequency of categories and indicators of social presence
Constant Comparative Analysis (Qualitative)	One discussion thread with high social presence density and one with low social presence density	Identify codes, groups and themes in the data overlooked by content analysis

Word Count and Linguistic Inquiry

The chat messages from each of the six sessions were compiled and downloaded from the post conference recordings. Data from the attendees who did not give consent were deleted. To get an overall sense of the data, the transcripts were initially explored with word count to get an overall sense of the data and the frequency of words used. MAXQDA+, a software program to facilitate text analysis, was used to calculate word frequency counts. This was followed by linguistic inquiry using a free version of the Linguistic Inquiry and Word Count (LIWC) 2015 text analysis program to count words in the chat posts in socially meaningful categories.

According to Lowenthal (2012), word count is an effective preliminary method to analyze data by exploring the occurrence of words in a data set. The assumption with word

counts, according to Leech and Onwuegbuzie (2007), "is that more important and significant words for the person were used more often" (p. 568), thus allowing researchers a means to understand an individual's perspective through their words. However, they go on to emphasize the limitations of using word count as it can break down a word and its true meaning. Therefore, the authors recommend that word count should be used with other methods to analyze data. The researcher decided to use LIWC to conduct a simple analysis of the social language used in online conversations. For this study, both linguistic inquiry and word count were used solely as a simple assessment if certain types of words (e.g., greetings and salutations, which are indicators of social presence) were used more often than others.

Transcript Content Analysis

Researchers have used the transcripts of online discussions to investigate the praxis of the social construction of knowledge (Gunawardena, Carabajal, & Lowe, 2001; Gunawardena, Lowe, & Anderson, 1998) and critical thinking (Bullen, 1997; Newman, Webb, & Cochrane, 1995; Wickersham & Dooley, 2006). In fact, Henri (1992) calls this type of communication "a gold mine of information concerning the psycho-social dynamics at work among students, the learning strategies adopted, and the acquisition of knowledge and skills" (p. 118). Transcripts of online discussions can be useful for discovering and gaining insights into individuals' preferences and behaviors as well as into the complex social and communication trends and patterns they generate (Kim & Kuljis, 2011). Chat messages, a form of online communication, are an essential part of interacting during a professional online conference session. Chat messages offer a way for attendees to interact with each other and the presenter. The chat messages among the attendees and between the attendees and the presenter are a type of data that was analyzed using transcript content analysis. This transcript content analysis technique can be

defined as ‘‘a research methodology that builds on procedures to make valid inferences from text’’ (Anderson, Rourke, Garrison, & Archer, 2001, p. 10). Analysis of content transcripts, representing voice-based and text-based synchronous activities of the presenters, was also completed.

Transcript content analysis is a popular “research method for the objective, systematic and quantitative examination of communication content” (Berelson, 1971, p. 18). Its’ strength is in a researcher, from any discipline that involves human communication, having access to the content without influencing participants during the research, then taking the large amount of data and reducing it to a manageable value for analysis (De Wever, Schellens, Valcke, & Van Keer, 2006; Strijbos, Martens, Prins, & Jochems, 2006). The popularity of this quantitative research methodology has generated a number of different definitions depending on the research and method in which it is used. For instance, Rourke and Anderson (2004) defined it as a research methodology that entails dividing communication content into units of analysis, coding and assigning units into categories, and providing quantitative results for these categories. Similarly, Anderson et al., (2001) define it as a set of research procedures that include “collecting samples of representative text, devising reliable and valid rules for categorizing segments of the text and identifying and defining the target variables” (p. 10). In its broadest term, it is “a systematic, reliable way of coding content into a theoretically meaningful set of mutually exclusive categories” (Donnelly & Gardner, 2011, p. 3). It can be defined as “the study of recorded human communication” (Babbie, 2001, p. 304). Thus, the researcher used “analytical constructs, or rules of inference, to move from the text to the answers to the research question” (White & Marsh, 2006, p. 27) following a validated coding procedure described in subsequent paragraphs.

Assessing the quality of interactions and the learning experience taking place in a CMC environment has been a goal in the field of online learning, specifically by examining the data for comparisons and contrasts; where a match between findings is sought or where contradictory findings emerge about the learners (Donnelly & Gardner, 2011). Five basic steps used in other content analyses studies of computer conferencing discussions were followed (Donnelly & Gardner, 2011; Henri, 1992; Lowenthal, 2012; Rourke & Anderson (2004). The five steps are:

1. Select appropriate and representative samples of the communication that has been targeted for study.
2. Create an appropriate protocol for identifying and categorizing the target variables.
3. Compile selections of transcripts or entire transcripts into text files.
4. Code the transcript data by describing the target variables or by identifying relationships between variables.
5. Compare the coded transcripts for reliability.

Many analytical models have been used to assess social presence in online discussions. Whiteside's (2015) *Social Presence Model* was chosen as the coding protocol, which is based on the original method developed by Garrison, Anderson, and Archer (2001) in their *Communities of Inquiry Model* (CoI). The CoI has the "distinct categories and clear indicators", which Garrison, Cleveland-Innes, Koole, and Kappelman (2006, p. 2) suggest are important for any coding scheme chosen for transcript content analysis. These researchers also indicate that utilizing an established theoretical framework within the systematic method of transcript content analysis helps to ensure internal validity. The *Social Presence Model* was chosen because it has the original indicators from the social presence coding scheme from the validated CoI

framework, and two elements to further the understanding of social presence, including: (a) prior Knowledge & Experience; and (b) Instructor Involvement.

Garrison et al., (2001) describe social presence as the learner's competency to establish and project themselves socially and affectively and also be able to perceive other learners as 'real people'. The three main factors that allow for the effective projection and establishment of social presence are Affective Expression, Open Communication and Group Cohesion (Rourke et al., 1999a). Scholars like Swan (2003), Hughes et al. (2007) and Lowenthal (2012) have adapted and expanded the indicators with Whiteside's version providing the coding sheet in Table 3 that was used in the transcript content analysis of the chat messages. According to Garrison et al. (2001), the CoI model indicators should "not be seen as immutable" (p. 9), meaning that other studies may find it necessary to refine or revise the criteria when using the model, as was the case in this study.

Table 3

Social Presence Model

Category & Indicator	Definition	Criteria
Affective Association (aka Affective Expression or Affective Responses)		
Emotion	Employs conventional expressions of emotion, or unconventional expressions of emotion.	Refers directly to an emotion or an emoticon. Use of capitalization only if obviously intended
Humor or sarcasm	Involves teasing, cajoling, irony, understatements, and/or sarcasm.	Only code if a clear indication that this is meant to be funny, e.g., extra punctuation or an emoticon
Paralanguage	Features text outside formal syntax used to convey emotion (e.g., emoticons, emojis, excessive exclamation, and ALL CAPS).	

Category & Indicator	Definition	Criteria
Self-Disclosure	Presents details of life outside of class, and/or expresses vulnerability.	An expression that may indicate an emotional state but does not directly refer to it; Uncertainty, non-comprehension
Community Cohesion (aka Group Cohesion or Cohesive Responses)		
Offers Help	Participant provides additional readings, URLs, or other resources to help another participant or the entire group. May double code with Additional Resources.	
Greetings or Salutations	Uses communication that serves a purely social function: greetings, closures.	
Group References	Addresses the course community as we, us, or our.	Any reference to the group with a possessive pronoun
Social Sharing	Shares information relating to their work and/or home life. Also includes phatics, or expressions of good will.	Any expression that lets the group know about the circumstance of the author
Vocatives	Addresses or refers to participants by name.	
Interaction Intensity (aka Open Communication or Interactive Responses)		
Acknowledgement	Quotes or refers directly to a classmate or instructor.	Explicit or implicit recognition that another message has been the motivation for this message
Compliments or Agreement	Compliments others or agrees with the contents of others' messages.	Expressing agreement with each other or contents of messages
Disagreement	Responds to others in disagreement. Could be respectful.	Expressing disagreement with each other or contents of messages
Inquiry	Asks questions of other attendees or the presenter. Or requests ideas from attendees without asking questions.	
Presenter Involvement		
Response to student	Presenter responds direct to a specific attendee or to a specific thread among several attendees.	
Session Contribution	Presenter provides a contribution to the whole session. Does NOT include instructions – See Presenter-Led Instructions.	
Instructions	Presenter provides instructions to get attendees started on a session activity.	

Category & Indicator	Definition	Criteria
Redirect	Presenter redirects the session discussion to get it back on topic.	
Digression	Presenter adds a social or slightly off-track contribution.	
Reference to Presenter	Attendees reference the presenter's comments, instructions, or background or knowledge. May include dual code other subcodes in this section.	
Knowledge & Experience		
Academic	Attendee refers to prior knowledge or experience.	
Level	Makes reference to the level of experience or knowledge. Could refer to advanced knowledge in the specific or closely related subject area. Or refers to not having a great deal of background in the subject area.	
Personal	Attendees refer to personal experience outside of academic and work experiences.	
Professional	Refers to a work or training experience outside the online conference experience.	
Additional Resources	With a reference to their prior knowledge or experience, the presenter or attendee provides additional resources aimed at extending knowledge. May double code with Offers Help.	

With permission from Dr. Aimee Whiteside (see Appendix K), the list of indicators was amended, for the first time, to reflect the context of the online learning environment whereby 'attendees' and 'presenters' replaced 'instructors' and 'students'. Entries from six sessions delivered in April 2016 were examined several months after the conference to ensure that no intrusion or disruption in the conference by the researcher occurred.

Constant Comparison Analysis

The final method of analysis using chat posts and voice-based communication was constant comparison analysis. Glaser and Strauss (cited in Lawrence & Tar, 2013) created the

constant comparison method in their development of grounded theory. Constant comparison analysis is a research method used to examine the occurrence of certain words, concepts, themes, phrases, characters, and sentences within a text or sets of texts, according to Glaser (cited in Lawrence & Tar, 2013). The analysis of the data is cyclical because it requires the researcher to take each piece of data and compare it to all the other pieces of data and where coded data is constantly analyzed for patterns and themes to emerge (Leong, Joseph, & Boulay, 2010). Leech and Onwuegbuzie (2007) explain that constant comparison analysis can be conducted inductively (e.g., codes emerge from the data), deductively (e.g., codes are identified prior to analysis and then looked for in the data), or abductively (i.e., codes emerge after repetition). Constant comparison analysis originally was developed to analyze data that were collected over a series of turns and it is now accepted as a method for analysis of data collected at one time (e.g., a single round of interviews).

Constant comparison analysis is one of the most commonly used techniques of qualitative analysis for exploring and understanding the major findings of an event or situation (Leech & Onwuegbuzie, 2007). It was used in this study to dig more deeply into the chat messages and voice-based discussions in order to explore and understand the nature of social presence. Based on the results of the word count and transcript content analysis, constant comparison analysis was conducted with two presentations—one with the highest social presence density and one with the lowest social presence density. The entire chat discussion for each presentation was read, and separated into smaller meaningful units. Each unit was then labeled with a code while constantly comparing new codes with previous ones. Similar units were labeled with the same code, thus allowing for easy grouping of the coded units. The codes were grouped together by similarity so that themes emerged that could be identified from the data.

Questionnaire

The second research question - *How do attendees and presenters perceive social presence in a professional online conference?* - was analyzed using a questionnaire. An applicable pre-existing questionnaire for the study of social presence in a professional online conference could not be found. Online instructors and researchers have adapted the *Social Presence Scale* to study social presence in online courses (Cobb, 2009; Picciano, 2002; Swan & Shih, 2005). The instrument, a subscale of the GlobalEd Questionnaire developed by Gunawardena and Zittle (1997), was developed to study the effectiveness of social presence in predicating satisfaction in a computer-mediated environment. The *Social Presence Scale* was developed by Swan and Shih in 2005, and a few years later Arbaugh et al., (2008) created and tested a 34-item instrument that addressed each of the presences (cognitive, teaching and social) as common methodologies and measures to utilize the CoI framework. Therefore, in this study, the social presence scales of Gunawardena and Zittle (1997), Swan and Shih (2005), and Arbaugh et al., (2008) were integrated and the instruments were modified by changing the context from an online course to a professional online conference. Suskie (1996) provides a list of considerations for researcher drafting a survey. Those include writing items that (a) convey the meaning of the inquiry exactly as the research is intended, (b) avoid broad generalizations about attitudes or opinions, and (c) minimize the time burden on respondents. Since survey development should be based on the principles of accuracy and relevancy (Suskie, 1996), references to 'instructors', 'students', 'courses' were replaced with 'presenters', 'attendees' and 'sessions' respectively.

The survey instrument, with 23 items, was used to gather experiential information from the respondents and to obtain their rankings of their perceptions of Affective Expression, Open

Communication, Group Cohesion, Presenter Involvement, learning and satisfaction on two 5-point Likert scales. These perceptions were expected to directly influence by the interactions and communication that took place between attendees and between the presenter(s) and attendees, through synchronous communication. Four items on the Web-based survey collected basic demographic, non-identifying information regarding attendee age, gender, profession, and number of previous TCC Conferences attended. Three items tested for Affective Association, three questions for Community Cohesion, and three items for Interaction Intensity, which are the social presence indicators from the original CoI framework. The fourth factor, Presenter Involvement, is an adaptation of Swan and Shih's (2005) addition of instructor presence that Whiteside, (2015) included in her coding scheme and called Instructor Involvement. Four questions tested for Presenter Involvement. Two items tested for perceived learning that may have occurred during the session. Participant satisfaction with the interaction with other attendees, with the chat discussions, with their perceived learning and with the presenter(s) was also measured. These four items were not adapted from other survey instruments. Session ratings utilized a conventional Likert scale (Strongly Disagree=1; Strongly Agree=5), while item-satisfaction ratings utilized an ordinal scale with the same range of quantitative values (1=Very Dissatisfied; 2=Not Satisfied; 3= Neutral; 4=Satisfied; 5=Very Satisfied).

Table 4 shows the evolution of the various social presence scales over two decades and their potential alignment with the *Social Presence Indicators* developed by Rourke, et al., (1999), Polhemus, Shih and Swan (2001), and Swan (2002). It also outlines the modification of the wording and language of the questionnaire that was used in the current study. References to 'instructors,' 'students,' and 'courses' were replaced with 'presenters,' 'attendees,' and 'sessions' respectively.

Table 4

Evolution of the Social Presence Scales

Social Presence Indicators (Rourke et al, 1999; Polhemus, Shih & Swan, 2001; Swan, 2002)	Gunawardena and Zittle, 1997	Swan & Shih, 2005	Arbaugh et al., 2008	Current Study
	Messages in GlobalEd were impersonal.			
Affective Expression	CMC is an excellent medium for social interaction.	Online or web-based education is an excellent medium for social interaction.	Online or web-based communication is an excellent medium for social interaction.	Online conference sessions are an excellent medium for social interaction.
Affective Expression	I was able to form distinct individual impressions of some GlobalEd participants even though we com-municated only via a text-based medium.	I was able to form distinct individual impressions of some course participants.	I was able to form distinct impressions of some course participants.	I was able to form distinct individual impressions of some attendees in this session.
Affective Expression			Getting to know other course participants gave me a sense of belonging in the course.	Getting to know other attendees gave me a sense of belonging in the session.
Open Communication	I felt comfortable conversing through this text-based medium.	I felt comfortable conversing through this medium.	I felt comfortable conversing through the online medium.	I felt comfortable conversing through this online medium.
Open Communication	I felt comfortable introducing myself on GlobalEd.			
Open Communication	I felt comfortable participating in GlobalEd discussions.	I felt comfortable participating in course discussions.	I felt comfortable participating in the course discussions.	I felt comfortable participating in the discussions through this online medium.
Open Communication	I felt comfortable interacting with other participants in the conference.	I felt comfortable interacting with other participants in the course.	I felt comfortable interacting with other course participants.	I felt comfortable interacting with other attendees in this session.

Social Presence Indicators (Rourke et al, 1999; Polhemus, Shih & Swan, 2001; Swan, 2002)	Gunawardena and Zittle, 1997	Swan & Shih, 2005	Arbaugh et al., 2008	Current Study
Open Communication		I thought there was a great deal of interaction in the online discussions.		
Group Cohesion	I felt that my point of view was acknowledged by other participants in GlobalEd.	I felt that other participants in the course acknowledged my point of view.	I felt that my point of view was acknowledged by other course participants.	I felt that attendees in the session acknowledged my point of view.
Group Cohesion	The introduction enabled me to form a sense of online community.	The "Meet Your Classmates" section enabled me to form a sense of online community.		
Group Cohesion		Online discussions enabled me to form a sense of community.	Online discussions help me to develop a sense of collaboration.	Chat discussions help me to develop a sense of community.
Group Cohesion	Discussions using the medium of CMC tend to be more impersonal than face to-face discussion.			Chat discussions tend to be more impersonal than face-to-face conference discussions.
Group Cohesion	CMC discussions are more impersonal than audio conference discussions.			
Group Cohesion	CMC discussions are more impersonal than video teleconference discussions.			
Group Cohesion			I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.	
Presenter Involvement	The moderators created a feeling of online community.	The instructor created a feeling of online community.		The presenter created a feeling of online community.
Presenter Involvement	The moderators facilitated discussions in the GlobalEd conference.	The instructor facilitated discussions in the course.		The presenter facilitated discussions in the session.

Social Presence Indicators (Rourke et al, 1999; Polhemus, Shih & Swan, 2001; Swan, 2002)	Gunawardena and Zittle, 1997	Swan & Shih, 2005	Arbaugh et al., 2008	Current Study
Presenter Involvement		I was able to form distinct individual impressions of the instructor in this course.		I was able to form distinct individual impressions of the presenter in this session.
Presenter Involvement		I felt comfortable conversing with the instructor through this medium.		I felt comfortable conversing with the presenter through this medium.
Presenter Involvement		My point of view was acknowledged by the instructor.		
Presenter Involvement		The instructor for this course met my expectations.		
Cognitive Presence		I was able to learn from the online discussions.		I experienced new learning or have new questions as a result of the online discussions.
Cognitive Presence		I was stimulated to do additional reading or research on topics discussed in the online discussions.		I am stimulated to do additional reading or research on topics discussed in this online session.
Cognitive Presence		Participating in the online discussions was a useful experience.		
Cognitive Presence		Participating in the online discussions enabled me to form multiple perspectives.		

The scale was adapted and eight items were removed due to lesser relevance to a professional online conference while four questions were added to measure perceived satisfaction as a construct. Questions that were removed from the survey are listed in Table 5.

Table 5

Social Presence Items Eliminated from Present Survey

Survey	Survey Item
Gunawardena and Zittle (1997)	Messages in GlobalEd were impersonal.
Swan and Shih (2005)	I thought there was a great deal of interaction in the online discussions.
	The "Meet Your Classmates" section enabled me to form a sense of online community.
	My point of view was acknowledged by the instructor.
	The instructor for this course met my expectations.
	Participating in the online discussions was a useful experience.
	Participating in the online discussions enabled me to form multiple perspectives.
Arbaugh et al., 2008	I felt comfortable disagreeing with other course participants while still maintaining a sense of trust.

Table 6 displays the survey items as they relate to the study's second research question.

Table 6

Research Question 2: How do attendees and presenters perceive social presence in a professional online conference?

Item No.	Survey Item and Category
1.	Online conference sessions are an excellent medium for social interaction. [Affective Expression]
2.	I felt comfortable conversing through this online medium. [Open Communication]
3.	I felt comfortable participating in the discussions through this online medium. [Open Communication]
4.	I felt comfortable interacting with attendees in this session. [Open Communication]
5.	I felt that attendees in the session acknowledged my point of view. [Group Cohesion]
6.	I was able to form distinct individual impressions of some attendees in this session. [Affective Expression]
7.	Getting to know other attendees gave me a sense of belonging in the session. [Affective Expression]

Item No.	Survey Item and Category
8.	Chat discussions helped me to develop a sense of community. [Group Cohesion]
9.	Chat discussions tend to be more impersonal than face-to-face conference discussions. [Group Cohesion]
10.	I am stimulated to do additional reading or research on topics discussed in this online session. [Learning]
11.	I experienced new learning or have new questions as a result of the online discussion. [Learning]
12.	The presenter(s) created a feeling of online community. [Presenter Involvement]
13.	The presenter(s) facilitated discussions in the session. [Presenter Involvement]
14.	I was able to form distinct individual impressions of the presenter(s) in this session. [Presenter Involvement]
15.	I felt comfortable conversing with the presenter through this online medium. [Presenter Involvement]
16.	Please rate your level of satisfaction with the interaction with other attendees in this session.
17.	Please rate your level of satisfaction with participating in the chat discussions in this session.
18.	Please rate your level of satisfaction with your learning in this session.
19.	Please rate your level of satisfaction with the presenter(s) in this session.

The survey was created and hosted using the Web-based subscription service QuestionPro. It was administered electronically via the 2016 TCC Online Conference platform. A copy of the complete survey is included in Appendix G. In addition, the actual online survey was made available to the researcher's Doctoral Committee Chair for his inspection. The survey administration process is discussed in the Data Collection section of the chapter.

Interviews

An online interview was the final strategy for data collection in this study. Interviews are often used to determine how respondents perceive their experience, what is especially significant about it, what might be significant to others, and how the experience came to be what it is (Krathwohl, 1998). Interviews are also a very common form of data collection in case study

research (Hancock & Algozzine, 2006). As Cui, Lockee, and Meng (2013) assert, the interview is a frequently used method in measuring social presence and it helps to provide researchers with a different perspective of participants' perceptions of social presence. In this study, the online interviews were used "to gather original data with the intention of subjecting them to analysis to provide new evidence in relation to a research question" (Salmons, 2009, p. 5).

Ten open-ended interview questions developed for students by Swan and Shih (2005) were used for attendees (see Table 7). Four open-ended interview questions developed for instructors by Stone and Chapman (2006) and two original questions developed by the researcher were used for presenters (see Table 8).

Table 7

Interview questions developed for attendees

1. What did you think about when you were preparing to post a message to the session discussion? Did you think about how you would sound to others? Did you think about how what you say would influence how others think of you?
2. Did you use any strategies to put 'personal' touches in your messages? If so, why did you want to make yourself sound more personal in chat discussions?
3. How did the ways other attendees wrote their messages influence your impressions of them? Did others' language use influence that of yours? If so, how?
4. What did you think about when you were responding to others' message?
5. What were the criteria you used while choosing which messages to respond to?
6. What are your impressions of the presenter in this session? How were these impressions formed?
7. Did the presenter's style of presenting influence the way you constructed your messages in the session? If so, how?
8. Did the presenter participate in the chat discussions? What do you think about this?
9. As the tone of your voice is not available in the online session, did you find it as a big constraint when communicating with other attendees? If so, what did you do to overcome the constraints?
10. How would you define an online community? Was a community formed in this session? In this conference?
11. Did you participate in the TCC Happy Hour or any other TCC social event? Why or why not?

Four open-ended interview questions developed for instructors by Stone and Chapman (2006) and two original questions developed by the researcher were used for presenters (see Table 9). The interview provided an opportunity to more deeply explore the participant's perspectives about their online conference experience, including their attitudes toward other attendees and presenters, and their interactions with other attendees and presenters within the sessions attended.

Table 8

Interview questions developed for presenters

Question	Objective
1. What comes to mind when I mention the words 'instructor presence?'	Elicits the presenter's personal reflections on the concept of instructor presence, and tries to invoke the presenter's individual and personal feelings on the meaning of instructor presence.
2. How do you construct your own presence, in the online classroom?	Challenges the presenter to reflect on the process of creating presence—to take a step back, and visualize the process from inception.
3. What instructional strategies do you use to promote instructor presence in your online course?	Inquires about the pedagogy of instruction
4. How do you sustain instructor presence in your online course	Inquires about the effectiveness of the instructional methodologies used to construct one's presence
5. How would you define an online community? Was a community formed in this session? In this conference?	Investigates the presenter's personal reflection on the concept of the creation of online communities.
6. Did you participate in the TCC Happy Hour or any other TCC social event? Why or why not?	Elicits the presenter's social presence activities in other times of the conference.

The online interviews were recorded and transcripts were explored using content analysis to explore how participants perceive their conference experience and investigate possible differences.

Data Collection

Data was collected over the Internet because of the nature of the online conference that separates the participants from the researcher via time and distance. The goal was to collect (a) transcripts from five, 45-minute and one 20-minute conference session to help answer the first research question; (b) 51 completed questionnaires to help answer the second research question; and (c) 18 interviews lasting approximately 30 minutes to help answer the third research question.

TCCHawaii.org invited all 45-minutes session presenters accepted for the conference to voluntarily participate in research by having their recorded conference sessions made available to the researcher through TCCHawaii.org (see presenter notice in Appendix A). It was the researcher's assumption that the 45-minute sessions would allow for more time and interaction amongst the attendees and presenters than the 20-minute sessions. Of those presenters responding in the affirmative to the TCCHawaii.org request, five 45-minute and five 20-minute conference sessions were identified as potential cases for this research with six being analyzed. These presenters were provided with more detailed information about the study, including the request to post a voluntary survey for themselves and attendees and a request to interview the presenters, along with consent information. Presenters responding in the affirmative indicated consent to participate. For presenters who did not respond or declined to participate in this more extended project, their session was not included in the study and another session was selected from the larger pool agreeing to research participation. (See Appendix E for a copy of the consent letter to presenters). Once at least ten presenters agreed to participate, all registered attendees were informed that these sessions were a part of a research project involving transcript

content analysis of recorded sessions (see notifications placed in the conference schedule in Appendix C and attendee consent Appendix D).

The online survey for presenters and attendees included some basic demographic information and a set of questions designed to measure social presence (see Appendix G). The survey was created using QuestionPro, an online survey software. Using this 'self-service' Website, the researcher constructed the questionnaire using one of a set of templates that conformed to Dillman's (2006) technical recommendations for building online surveys. QuestionPro's two integrated components are (a) database administration tools to help the researcher upload and manage participant contact information, and (b) survey administration tools that tracked survey responses. These dual components allowed the researcher to download completed survey data at any time during the data collection period, and perform simple statistical analysis. The QuestionPro website stored original survey materials, the participant database, and individual responses in a secure, password-protected area accessible only to the researcher.

To take the survey, presenters and attendees were reminded by moderators about the survey before the session started and sent a link to the survey in the chat box at the beginning and end of each session. Upon completion of the survey, respondents were asked if they would be willing to participate in a follow up interview with a section on the survey that allowed respondents to provide personal contact information. The survey was only open for that day's session in order to keep the presenters and attendees from mixing up their experiences in other sessions they participated in. Data was kept anonymous and the results are kept on the researcher's password protected, encrypted computer.

The web-conferencing platform was used to automatically record all live sessions in the TCC Conference. Permanent access to these session recordings are provided on the TCC Conference web site so that registered participants can watch the sessions that are most pertinent to their interests and access other sessions virtually any time they log in to the password protected site. The text-based and audio communication for six presenters who agreed to participate was analyzed using transcript content analysis. This quantitative research method offers a nonobtrusive technique, the capability to archive data, and the ability to reduce large amounts of data to a numeric value for analysis (Gerbic & Stacey, 2005; Strijbos et al., 2006). The inconspicuous nature of this technique was an important advantage for the researcher, as it permitted access to the content without influencing participants with her presence as an observer. Online conference sessions were transcribed a month after the TCC Conference ended. The use of archived data ensured no intrusion or disruption in the online presentation occurred. Data was saved in an electronic text-based format to enable the researcher to examine the data when needed and in a way that allowed meaning to be extracted from the data in a valid, reliable method. Codes were assigned to specific communication and interaction of social presence, thus enabling statistical analysis of the data to make inferences about the meaning of the communication.

The third data collection performed was one-to-one online interviews. A total of 19 people, ten presenters and nine attendees, participated in one-to-one online interviews. Four of the five presenters conducted a 45-minute presentation and one 20-minute session presenter. The other five interviews were with presenters whose presentations were not included in the transcription content analysis. In addition, using purposive sampling techniques, nine attendees (at least one from each of the six sessions) were selected from those providing consent.

Interviews were conducted online via Blackboard Collaborate and audio recorded using the platform's recording function. Due to time and the geographically dispersed locations of the researcher and the participants, it was not feasible to conduct in person interviews. Conducting the interviews online provided continuity of the social presence study, as the researcher was interacting in the environment and mimicking the phenomena that took place online by exploring it in the kind of setting where it occurred. The technology itself (i.e., Blackboard Collaborate) was a part of the phenomenon under investigation.

Presenters and attendees, who provided consent, were contacted to participate in the one-on-one interviews. Each interview lasted approximately 30 minutes. The interviews took place a week after the TCC Conference ended to give participants time to catch up with their work and to allow the researcher time to review the results of the surveys. At the beginning of each interview, the researcher explained the privacy and confidentiality policy and the goal of the study, how long the interviews would take and answered any questions participants. Interviews were recorded using the recording capability provided by the Blackboard Collaborate software. Transcripts were made and analysis done using qualitative constant-comparison methods.

Data Analysis

Word Count and Transcript Content Analysis

Data analysis for this study was guided by Donnelly and Gardner (2011); Henri, (1992); Lowenthal, (2012); and Rourke and Andersons' (2004) recommendations for conducting quantitative content analysis of CMC transcripts. Since online conference attendees predominantly communicate via text, a permanent record of communication exists. Therefore, a significant amount of data is readily available for investigation making transcript content analysis a useful methodology (Garrison et al., 2006). The researchers suggest that the

investigator needs to embark on a five-step process for analyzing data. The five steps involve (a) identifying appropriate and representative samples of the communication to be studied; (b) compiling the selections of transcripts into text files; (c) creating a protocol for identifying and categorizing the target variable(s) and training coders how to use this protocol; (d) coding the transcripts by analyzing the data to either describe the target variable(s) or to identify relationships between variables; and (e) comparing the coded transcripts for reliability. According to Anderson, Rourke, Garrison, and Archer, (2001) this process ultimately ends in "descriptive or inferential conclusions about the target variable" (p. 10). Thus, this process enabled the researcher to present the data in a more meaningful way concerning the manifestation, perceptions and influence of social presence on attendees and presenters attending a professional online conference.

The researcher began by gaining access to the six recorded sessions. The text produced as a result of communication and interaction between attendees in the chat posts were exported to a text file that was then subjected to quantitative transcript content analysis using MAXQDA+, a data collection and coding tool. The audio-based portion of the presenter's presentations during the sessions were transcribed and analyzed using the same coding scale. First, a word frequency and linguistic inquiry was conducted for in and between the sessions to get an idea of the vocabulary that was used by attendees and presenters.

Rather than creating a protocol for identifying and categorizing social presence, a coding scale adopted and adapted from Gunawardena and Zittle (1997), Swan and Shih (2005), and Arbaugh et al., (2008) of the chat messages was used. Content analysis researchers often choose the 'message', an individual threaded discussion post, as the unit of analysis within asynchronous CMC (Garrison et al. 2001; Gunawardena et al., 1998; La Pointe & Gunawardena,

2004; Orrigun et al., 2005). The message is an identified and defined unit of analysis where the length and content of the message are decided by the participant and not the transcript coder (Orrigun et al., 2005; Garrison, 2001). Often, a chat post may contain merely a single phrase such as, "That was great!" or a chat post may contain any number or combination of words, sentences, fragments, and emoticons. In addition, these messages may or may not be well formed. Determining what is or is not a specific unit of communication became very complicated, thus the attendee's chat message was the unit of analysis. "Coding at the message level alleviates the need for the coders to identify units in more subjective ways" (Garrison et al., 2006, p. 5). Therefore, message-level units, corresponding to what one participant posted into one chat message in one session, was coded for the presence of a social presence characteristic.

The categories that were used to classify each message level into one of five categories of social presence were as follows:

1. Affective Expression
2. Open Communication
3. Group Cohesion
4. Presenter Involvement
5. Knowledge & Experience

Where a single message posted by the attendee or presenter may exhibit characteristics of more than one category, the message posted was coded as exhibiting one or more indicators from each of the five categories of social presence. Pre-determining the number of coding decisions was an advantageous strategy used by Anderson et al., (2001) for notifying coders about the need to make a decision and providing a technique for calculating reliability without requiring coders to figure out the number or the exact text length of indicators present per unit of analysis. Totals

for each category were also easily calculated and expressed by reporting the percentage of total instructor postings that contained each of the categories.

Frequency and percentage of social presence categories that were observed in the messages posted by the attendees and presenters were calculated. The total number of postings for a given category of social presence was divided by the total number of messages posted in that session to obtain percentages. As the final step in this five-phase cycle, the coded transcripts were compared for intra-rater reliability where the researcher conducted the same assessment twice over a period of one month to establish coder stability.

Constant Comparative Analysis

Constant comparative analysis of the discussion postings was conducted by comparing the session with the highest social presence density with the session having the highest social presence indicators. Using a calculation called the Social Presence Density Calculation, the level of social presence in each session was computed. Social Presence researchers Rourke et al., (1999) created this index to indicate the level of social presence in relation to the total amount of words coded. These researchers found that the Social Presence Density Calculation "provides an important quantitative description of computer conferencing environments [and]…allows for the formulation and testing of hypotheses in which social presence is used as a dependent or independent variable" (Rourke et al., 1999, p. 14-15).

This calculation involves counting the number of times an indicator is identified in each unit of analysis, dividing that number by the total number of words in each unit of analysis, then multiplying by 1000. The number of times an indicator occurs per 1000 words is the Social Presence Density score (SPD) (Rourke et al., 1999). An SPD score makes it possible to compare the level of social presence for each unit of analysis. In this study, a social presence density

calculation was performed for the overall social presence of each message, as well as the density per 100 words for Affective Association, Community Cohesion, Interaction Intensity, Presenter Involvement, and Knowledge & Experience in the text transcripts. One hundred chat posts was used rather than 1,000 words per Rourke's calculation since the unit of analysis was the chat post. The presentation with the highest social density score was then compared to the presentation with the highest social presence indicators in the hopes of identifying different ways social presence was manifested by presenters and attendees.

Questionnaire

The primary purpose of the survey data was to prompt exploration of how attendees and presenters perceived social presence in a professional online conference. Quantitative ratings for four social presence indicators were based on the average response to the Likert-type questions. Affective Association are indicators of social presence represented by the use of emoticons, humor, and self-disclosure that were explored through attendees perceived social presence of their peers in items 1, 6, and 7 (see Table 7). Open Communication refers to the level of interaction among participants evidenced by responses showing agreement/disagreement, approval, and referencing previous messages. This indicator was explored through items 2, 3, and 4. Group Cohesion explores the extent the group comes together as a community and involves sharing additional resources and information with the group and recognizes each member by name. It was explored through items 5, 8 and 9. Items 10 and 11 measured perceived learning that may have occurred in the session. Lastly, Presenter Involvement refers to the extent to which the presenter is an invested, active partner in the learning community that was explored through items 12 through 15. Attendees' perceived satisfaction with other attendees, the

presenter(s), their own learning and the chat discussions were also measured using a separate Likert-type scale.

Frequencies, percentages, means, median and standard deviations were calculated on all variables using the Statistical Package for the Social Science (SPSS). An overall measure of social presence was calculated by averaging the social presence items for each category. Validity is the most important characteristic a survey or test can have because without validity, interpretation have inappropriate or no meaning (Gay, Mills, & Airasian, 2011). The most commonly used measure of validity is a correlation coefficient. SPSS was used to generate Spearman rank-order correlations to assess the degree of relationships among perception of social presence, perceived learning, presenter involvement and perceived satisfaction. And finally Chronbach's alpha was used to measure internal consistency in the questionnaire where the greater the number of items in a summated scale, the higher Cronbach's alpha tends to be. "This is one reason why the use of a single item to measure a construct is not optimal. Having multiple items to measure a construct aids in the determination of the reliability of measurement and, in general, improves the reliability or precision of the measurement" (Kimberlin & Winterstein, 2008, p. 2277).

Interviews

Transcriptions of the interviews were compared across participants using comparative analysis to understand the ways in which they perceived their online conference experiences and investigate potential differences between the participants. The data were sorted in multiple ways to look for new insights or conflicting data to disconfirm the analysis. The process was repeated to reduce the chances of missing a vital piece of information. Themes that emerged between and among participants were identified, compared and interpreted. Common responses were

clustered together as well as analysis of different perspectives on central themes. “When a pattern from one data type is corroborated by the evidence from another, the finding is stronger [and] when evidence conflicts, deeper probing of the differences is necessary to identify the cause or source of conflict” (Soy, 1997, para. 20). According to Soy (1997) the technique prevents researchers from reaching premature conclusions by requiring that them to look data in different ways.

Data Management

All data were kept in electronic format on the researcher’s personal computer, which is both encrypted and password protected to ensure privacy. The researcher took the following steps to ensure data security. Data collected by the conference delivery system is kept on a server protected through firewalls and with encryption. Data collected from the social presence survey via QuestionPro and interview transcriptions were transferred to and kept in a secure and encrypted file storage system on the researcher’s Apple Mac computer via FileVault, which allows for full disk encryption.

Validity

Validity and reliability are often used to describe the quality of quantitative studies. The relationship between the two qualities of research is that both are desired. Ultimately, a study should have a measure that has both high validity and high reliability to yield consistent results in repeated application and as an accurate reflection of what the researcher intended to measure. In this study, data analysis and testing included four criteria described by Yin (2009) for judging the quality of case studies: construct validity, internal validity, external validity and reliability.

Construct Validity

Using multiple approaches and then integrating the information through a process of triangulation enhanced the validity of this multiple case study and limited the possibility of biases that could come from this single researcher project (Patton, 1999). Confirmation of the study's validity is known when the findings from the multiple sources all point to the same set of events, facts, or interpretations (Yin, 2003).

Internal Validity

The test for internal validity evaluated the evidence by comparing observed outcomes to predicted results and by making and examining a theory to explain the outcomes of the case study, including addressing competing explanations. Data analysis began by looking for information relevant to the researcher's theoretical propositions. The theoretical propositions of this study were:

1. Social presence manifests in the volume and patterns of interaction in a professional online conference and can be studied using the CoI framework.
2. A relationship exists between social presence and the development of a community of learners. Social presence influences the conference experience of attendees and presenters in a professional online conference by helping to develop a community of learners.
3. A relationship exists between social presence and perceived learning and satisfaction. Attendees and presenters perceive social presence contributes to learning and satisfaction in a professional online conference.

Using these propositions, the researcher created a matrix of categories into which evidence was placed and used pattern matching as an analytic technique to assist in linking the

data to the propositions (Yin, 2009). According to Yin (2009), using theory and theoretical propositions in both the design of a study and the analysis of its results strengthens the analytic generalizations of a study. This, according to Yin (2009), is because the cases are not a sample, rather an opportunity to shed light on the theoretical principles that guided the study or arose due to its findings.

External Validity

External validity ensured that the research findings were applicable outside the limits of the case study and was addressed by developing a case study protocol to guide data collection, analysis, and reporting as well as to help ensure alignment and consistency (Collins, Onwuegbuzie, & Jiao, 2007). (See Table 9). The test for reliability verifies that the research procedures and findings can be replicated by other parties (Yin, 2009). Yin (1994) also emphasized that by replicating the process in multiple cases, it strengthens the results, thus increasing the robustness of the findings.

Table 9

Coding Procedures Summary

1. Hard copy of text and transcribed audio files downloaded to MAXQDA+.
2. Coder reads text transcript of the chat discussions for each session and codes for one or more of the 26 possible social presence indicators.
3. Coder reads the text transcript of the audio-based sessions and codes for one or more of the 26 possible social presence indicators.
4. Upon completion of the first round of coding the coder sets aside the transcripts for three weeks.
5. Upon completion of the second round of coding the coder compares the two sets of coding outcomes and measures intra-rater reliability as a simple percentage.

Reliability

Several techniques described by Riege (2003) were used to enhance the reliability of this multiple case study. The researcher: (a) provided a full account of theories and ideas for each research phase; (b) recorded observations and actions as concrete as possible; (c) used a semi-structured case study protocol; (d) recorded data digitally; (e) developed a case study database at the end of the data collection phase to provide a method of organizing and documenting the mass amount of data; and (f) assured meaningful comparisons of findings across multiple data sources.

By building on previous research and replicating other researchers' coding schemes, questionnaires and interviews, this study employed similar instruments, which in turn increased the reliability of the study (Crano, Brewer, & Lac, 2014). Repeating research designs helped establish the reliability of the results, which were obtained from utilizing the same instrument repeatedly (Rourke & Anderson, 2004; Spatariu, Hartley, & Bendixen, 2004). The reliability of a study that uses content analysis, according to Palmquist (2005), is one that:

> refers to its *stability*, or the tendency for coders to consistently re-code the same data in the same way over a period of time; *reproducibility*, or the tendency for a group of coders to classify categories membership in the same way; and *accuracy*, or the extent to which the classification of a text corresponds to a standard or norm statistically (p. 11).

As a single coder, not having a group of coders to conduct inter-rater reliability did not prevent the researcher from being able to assess intra-rater reliability. A single rater's consistency at two or more stages served as intra-rater reliability. As Mackey and Gass (2005) explain, the researcher first codes all the data. Then, later, he or she would need to re-code the data or some part of it. The scores achieved by the same researcher at different points of time

(hence, 'intra-rater') can be compared through standard intra-rater reliability check procedures (Mackey & Gass, 2005).

Both the transcript analysis of the attendee chat posts and the presenter audio recordings were assessed for intra-rater reliability. The researcher kept two separate versions of the transcript analysis conducted; one set coded on July, 03 2016 and a second set coded a second time on August 10, 2016. Since the researcher produced Excel files for every case analyzed using MAXQDA, comparing the two sets of data from the two different dates to determine the intra-rater reliability over time was straightforward. However, a challenge with intra-rater reliability is the lack of target consistency level that must be achieved for content analysis of social presence (Rourke, Anderson, Garrison, & Archer, 2001b). Past research on social presence (e.g., Rourke et al., 2001a) was used as a guide of where intra-rater reliability results should be situated. A percent agreement for each of the comparisons resulted in the following reliability:

- Attendee chat posts: 92%
- Presenter text and audio recordings: 84%

The overall percent agreement for the transcript analysis conducted on six sessions for both attendees and presenters over two different times was 88%, which is an acceptable level of agreement. According to Portney and Watkins (cited in Mackey & Gass, 2005), "For simple percentages, anything above 75% may be considered 'good,' although percentages over 90% are ideal" (p. 244).

Chapter Summary

Previous research concluded that a large number of online conference studies rely too heavily on subjective data gathering methods and only obtain feedback on the immediate satisfaction of participants with the event (Anderson & Anderson, 2010; Hearnshaw, 2010). As a

result, these evaluations do not effectively capture the benefits and limitations of conferences as experienced by participants or evaluate the learning that actually occurs. Likewise, little research has been done concerning other learning contexts where social presence could exist or in further understanding and defining the cues and expanding the components of social presence within these contexts. No studies, to the researcher's knowledge, have been reported studying both social presence and professional online conferences to evaluate the effectiveness of these learning events.

In this chapter, the study was described as an explanatory case study because the goal of this research was to develop a rich understanding of the manifestation, perceptions and influence of social presence on attendees and presenters attending a professional online conference. This chapter has described the participants, setting, data instruments, collection, and analysis methods to be used in this multiple-case study. In the next chapter, the results of the data collected from participants are provided.

CHAPTER 4. DATA ANALYSIS AND INTERPRETATION

The purpose of this chapter is to present the results from the word count, transcript content analysis, questionnaire, and one-to-one interviews that served as the data collection instruments to explore social presence in a professional online conference.

In this chapter, the data and findings from each of the data collection methods will be presented. First is the presentation of findings from the word count, linguistic inquiry and transcript analysis from the online sessions to answer the first research question. Second is an overview of findings from the questionnaire to answer the second research questions. Third are the interview results to answer the third research question. The final section of the chapter shows how each of these contributed to answering the research question, which will be explained in more detail in chapter 5.

Presentation of Data and Findings for Research Question 1

Research Question 1 probed the concept of how social presence is manifested in the volume and patterns of interaction during a conference presentation. Garrison et al., (2001) describe social presence as the ability of learners to project themselves socially and emotionally as well as their ability to perceive other learners as 'real people'. For attendees, this was demonstrated by the way messages were posted in the chat box and how others interpreted those messages as well as how attendees interacted with each other and with the presenter using chat discussions. For the presenters, this was demonstrated by how they interacted with attendees, what they did and said to engage them in the presentations sessions within the context and tools limited to the computer mediated environment.

Transcript Content Analysis

A total of 51 presentations (excluding keynote, regional, and student presentations) were recorded over the period of the three-day conference, including thirteen 45-minute sessions and thirty-eight 20-minute sessions. In order to keep this research to a manageable multi case study, a total of six presentations, five 45-minute sessions and one 20-minute session, allowed the researcher to investigate if a difference in the manifestation of social presence by attendees and presenters existed between a longer and a shorter presentation.

The presentations varied widely with three sessions presented by individual scholars and three involving multiple faculty members co-presenting from across the United States. A combination of men and women conducted the presentations on a variety of topics, ranging from issues in higher education to cutting edge methods to engage K-12 students in using technology. Due to the researcher's careful adherence to IRB and the privacy of all the attendees and presenters who volunteered for the study, the researcher refrained from providing detailed descriptions of the topics or the presenter demographics.

Instead of analysis of threaded discussions as in Lowenthal's (2012) study, textual and audio recordings were put through an in depth analysis to investigate participant communication and behaviors during presentations within a professional online conference. Rourke et al. (1999) claim that directly measuring communication allows researchers to see the degree to which learners project themselves socially and affectively in online learning environments. Thus, the the data from the word count and linguistic analysis will be presented first followed by the transcript content analysis.

Word Count and Linguistic Analysis

A word count was conducted on the chat posts to initially explore the data and specifically the use of certain types of words across all six recorded sessions. Using MAXQDA+, the parameters for a word count frequency report were specified for the six cases analyzed together. All names were excluded from the count along with the articles 'a' and 'the' and demonstratives such as 'that', 'these' and 'those'. The singular and plural forms of the same word were combined (e.g., 'thank' and 'thanks'). The top 20 words were sufficient to get a basic understanding of the data. Table 10 lists the top 20 words used across all of the chat discussions in each case. Figure 3 is a visual representation of all 1,479 words used in a word cloud generated by the Wordle software application. Of the 1,479 terms, the word 'you' was used most frequently at 172 times (12%) followed next by the word 'thank' at 152 times (10%) and by 'I' at 151 times (10%). Words appeared that related to teaching, possibly arising because most participants were instructors and had such experiences in common, such as 'students' and 'presentation'. Some other features of interest are the fact that 'great' was used 65 times and 'yes' was used 60 times. Along with 'thank', these words are markers of politeness, formality, and social closeness according to Boroditsky, Schmidt, and Phillips (cited in Tausczik & Pennebaker, 2010). Another prominent word that appeared was 'http', which is an example of a Knowledge & Experience indicator. Participants were active in sharing additional resources accessible over the Internet with each other.

Table 10

Top 20 Words Used Across All Chat Discussions

Word	Frequency	Percent
You	172	12%
Thank	152	10%
I	151	10%
Is	76	5%
Students	67	5%
Great	65	4%
Yes	60	4%
Left	57	4%
Are	44	3%
Presentation	43	3%
With	42	3%
My	40	3%
Joined	36	2%
We	36	2%
Http	34	2%
Can	33	2%
No	30	2%
Use	29	2%
Do	26	2%
They	26	2%

Figure 3. *Word cloud of word count results for chat messages in all six cases.*

The top 500 words from the 1,479 words used in the sample were then put through a LIWC15, a linguistic inquiry and word count text analysis program (see Table 11) to gain a quick snapshot of what participants were paying attention to, thinking about, and feeling as reflected in the average language being used in the sessions. Traditional LIWC dimensions reflect percentage of total words within the text provided.

Table 11

Results of LIWC Analysis of Word Sample

Traditional LIWC Dimension	Data
I-Words (I, Me, My)	0.5
Social Words	10.2
Positive Emotions	9.4
Negative Emotions	2.6
Cognitive Processes	14.2
Summary Variables	
Analytic	77.7
Clout	77.7
Authenticity	35.2
Emotional Tone	99.0

Out of the 500 words, 10.2% were social or words that made reference to other people (e.g., they, she, us, talk, friends). According to Pennebaker, Boyd, Jordan, and Blackburn (2015), developers of the LIWC2015 program, people who use a high level of social words are more outgoing and more socially connected with others. The data also indicated there were more positive (9.4%) emotion words (e.g., happy, enjoy, good) than negative (2.65%) emotions words (e.g., sad, critical, offensive). The more that people use positive emotion words, the more optimistic they tend to be (Pennebaker et al., 2015). Cognitive processes are words that reflect how much people are providing concrete and complex information with words such as 'thinking', 'wonder', 'because', and 'knowledge' being used in their messages. A little over 14%

of the words in this sample captured cognitive words that suggest formal, logical, and hierarchical thinking patterns were used during the chat discussions.

The Summary Variables are "research-based composites that have been converted to 100-point scales where 0 = very low along the dimension and 100 = very high" (Pennebaker et al., 2015). Participants in this sample manifested both high analytical or formal thinking (77.7) and clout (77.7). Clout "refers to the relative social status, confidence, or leadership that people display through their writing or talking" (Pennebaker et al., 2015). Authenticity refers to words that are personal and honest. Interestingly, the sample had a low score of 35.2 in this variable indicating that participants may not have been their authentic selves or feeling they could be personal, humble, and vulnerable during the conference. Emotional tone is scored such that higher numbers are more positive and upbeat and lower numbers are more negative. With a score of 99.0, the sample showed an almost perfectly positive emotional tone.

Transcript Content Analysis

A modified version of the social presence indicators was used to conduct transcript content analysis on all of the chat discussions of attendees who gave permission in order to identify what types of social presence indicators were present in each presentation (see Table 12). Table 12 provides definitions for 24 indicators used in this study along with two new indicators that were included in this study that are discussed later in the chapter.

Table 12

Social Presence Categories, Indicators, and Definitions

Category	Indicator	Definition
Affective Association		
	Emotion	Employs conventional expressions of emotion, or unconventional expressions of emotion.
	Humor or sarcasm	Involves teasing, cajoling, irony, understatements, and/or sarcasm.

Category	Indicator	Definition
	Paralanguage	Features text outside formal syntax used to convey emotion (e.g., emoticons, emojis, excessive exclamation, and ALL CAPS).
	Self-Disclosure	Presents details of life outside of class, and/or expresses vulnerability.
Community Cohesion		
	Offers Help	Attendee or presenter provides additional readings, URLs, or other resources to help another participant or the entire group. May double code with Additional Resources.
	Greetings or Salutations	Uses communication that serves a purely social function: greetings, closures.
	Group References	Addresses the course community as we, us, or our.
	Social Sharing	Shares information relating to their work and/or home life. Also includes phatics, or expressions of good will.
	Vocatives	Addresses or refers to participants by name.
Interaction Intensity		
	Acknowledgement	Quotes or refers directly to a classmate or instructor.
	Appreciation	An instance or means of expressing thank you to another participant.
	Compliments or Agreement	Compliments others or agrees with the contents of others' messages.
	Feedback/Answer	Answering a question posed by another participant.
	Disagreement	Responds to others in disagreement. Could be respectful.
	Inquiry	Asks questions of other attendees or the moderator. Or requests ideas from attendees without asking questions.
Presenter Involvement		
	Response to attendee	Presenter responds direct to a specific attendee or to a specific thread among several attendees.
	Class Contribution	Presenter provides a contribution to the whole session. Does NOT include instructions – See Presenter -Led Instructions.
	Instructions	Presenter provides instructions to get attendees started on an activity
	Redirect	Presenter redirects the discussion to get it back on topic.
	Digression	Presenter adds a social or slightly off-track contribution.
	Reference to Instructor	Attendees reference the Presenter's comments, instructions, or background or knowledge. May include dual code other subcodes in this section.
Knowledge & Experience		
	Academic	Refers to prior knowledge or experience from an academic course experience.
	Level	Makes reference to the level of experience or knowledge. Could refer to advanced knowledge in the specific or closely related subject area. Or refers to not having a great deal of background in the subject area.

Category	Indicator	Definition
	Personal	Refers to experience outside of academic and work experiences that they bring to the learning experience.
	Professional	Refers to a work or training experience outside the academic experience. For example, an attendee may refer to a training experience or other work or professional experience.
	Additional Resources	With a reference to their prior knowledge or experience, a presenter or attendee provides additional resources aimed at extending knowledge. May double code with Offers Help.

Figure 4 provides an example of several chat posts from one of the cases coded using MAXQDA+. The indicators are color-coded and appear on the left-hand side of the screen. It illustrates several of the codes and how the indicators were applied at the message level for this example. All participants' names have been blocked out in this example and throughout this manuscript.

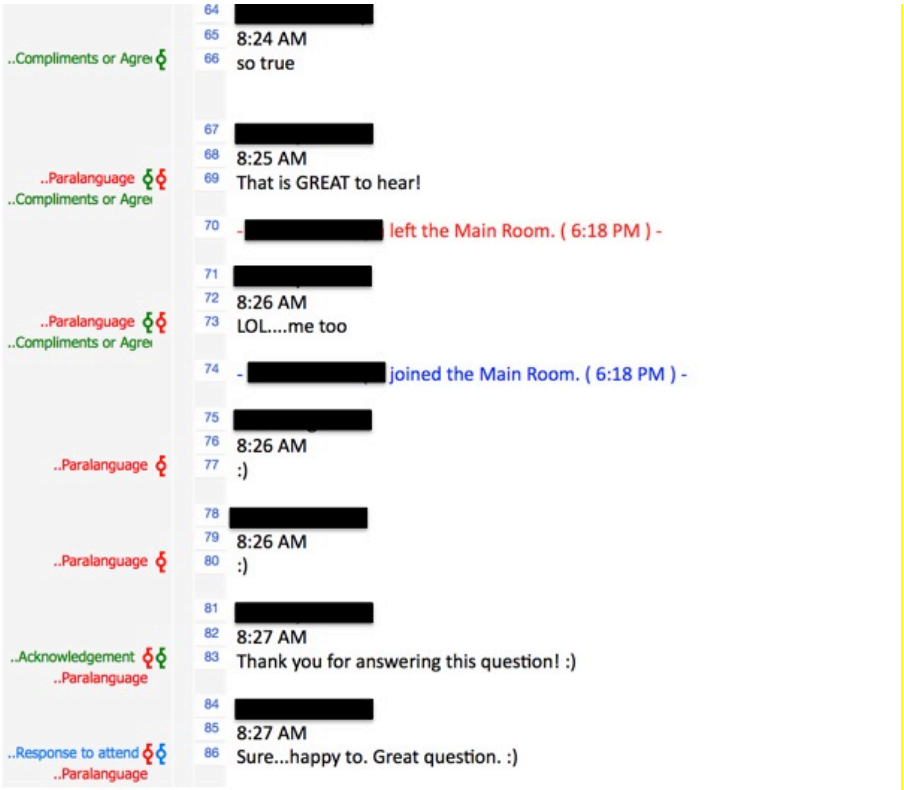


Figure 4. *Example of coded chat posts from an online session in the 2016 TCC Conference.*

This example provides a snapshot of the coding applied to the discussions in the six cases used in this study. For example, attendees concur with what the presenter has said, and are indicating agreement. As a result, this section is coded with four different indicators: compliment or agreement, paralanguage, acknowledgement, and response to attendee. As participants try to mimic conversation patterns, several used emoticons (e.g., :) made from a colon and right parenthesis), capitalization (e.g., "that is GREAT to hear"), and acronyms (e.g., LOL, indicating "laugh out loud") to communicate tone of voice and express emotion.

As an explanatory study, the researcher was interested in analyzing the data to see how the attendees and the presenters in this professional online conference established and maintained their social presence in both 45 and 20-minute presentation sessions. How individual presenters engaged in certain types of social presence behaviors differently than others was also an important part of this study. Finally, the researcher was also curious about the overall occurrence of all the social presence indicators (taken as a whole) across all of the chat discussions, as well as the degree to which each category (i.e., groups of specific types of social presence indicators) was used in each session. In summary, in order to explore how social presence manifests in chat discussions (i.e., the first research question guiding this study), the occurrence and the frequency of the social presence indicators across all of the chat discussions, within each session, and finally their relationship to each presenter (i.e., how often each presenter used specific social presence indicators) was investigated. Adapting the work of Lowenthal (2012), the stages of data analysis conducted and reported in the following sections are outlined below.

Stage 1: Examine Social Presence Indicators Across All Chat Discussions

a. Compare how many Affective Association, Community Cohesion, Interaction Intensity, Presenter Involvement, and Knowledge & Experience indicators are used.
b. Compare most used and least used of the indicators.
c. Compare each category of social presence for most frequently used indicators.

Stage 2: Examine Social Presence Indicators in each Case by Attendees

d. Compare average per post social presence indicators across all chat discussions.
e. Compare Affective Association, Community Cohesion, Interaction Intensity, Presenter Involvement, and Knowledge & Experience indicators within each session's chat discussions.

Stage 3: Examine Social Presence Indicators in each Case by each Presenter

f. Compare Affective Association, Community Cohesion, Interaction Intensity, Presenter Involvement, and Knowledge & Experience indicators from the audio recording of each presenter.
g. Compare Affective Association, Community Cohesion, Interaction Intensity, Presenter Involvement, and Knowledge & Experience indicators between presenters in each case.
h. Constant Comparative Analysis of the highest social presence density case with the highest social presence indicator case.

Stage 4: Examine Social Presence Indicators Across All Participants

i. Compare Affective Association, Community Cohesion, Interaction Intensity, Presenter Involvement, and Knowledge & Experience indicators across cases for attendees and presenters.

Stage 1: Social Presence Indicators Across All Chat Discussions

Identifying which category of social presence was manifested the greatest number of times and which was manifested the least across all of the sessions was an important first step in analyzing the session transcripts. In other words, was the Affective Association, Community Cohesion, Interaction Intensity, Presenter Involvement, or the Knowledge & Experience category used the most by attendees in their chat messages throughout the six cases? Content analysis revealed that of the five different categories of social presence, Interactive Intensity was present the most with 392 instances, Affective Association was present the second most with 123 instances, and Community Cohesion was next with 65 instances. Knowledge & Experience and Presenter Involvement were the least acknowledged of the indicators with 48 and 22 instances respectively. Table 13 provides an overall glimpse of the total social presence of six sessions in the TCC Conference.

Table 13

Coding results for social presence in six sessions

Category	Indicator	Frequency
Total Affective Association Responses		123
	Paralanguage	83
	Humor or sarcasm	30
	Self-Disclosure	6
	Emotion	4
Total Community Cohesion Responses		65
	Vocatives	27
	Offers Help	21
	Greetings or Salutations	7
	Group References	5
	Social Sharing	5
Total Interaction Intensity Responses		392
	Compliments or Agreement	142
	Feedback/Answer	120
	Appreciation	71
	Inquiry	37
	Acknowledgement	19

Category	Indicator	Frequency
	Disagreement	3
Total Presenter Involvement Responses		22
	Reference to Presenter	22
	Response to attendee	0
	Session Contribution	0
	Digression	0
	Instructions	0
	Redirect	0
Total Knowledge & Experience Responses		48
	Professional	17
	Additional Resources	4
	Personal	19
	Academic	6
	Level	2
Total		650

Comparing these results with what other researchers of social presence have noticed is difficult because no research has investigated social presence in professional online conferences. In a study conducted by Akyol, Vaughan, and Garrison (2011) to investigate the impact of time on the development of a community of inquiry in an online course offered over two different time periods, the majority of the messages were coded as Open Communication. In this study Open Communication was coded as Interaction Intensity. Both Akyol et al., (2011) and this study shared Interaction Intensity (aka Open Communication) as the social presence category that was manifested the most by study participants. Group Cohesion was the second most commonly coded category in the study conducted by Akyol et al., (2011), followed by Affective Expression, whereas the current study resulted in Affective Association being the second most manifested category followed by Community Cohesion. These results are similar to Lowenthal's (2012) findings for an online graduate education course.

Within each of the categories used for social presence, variations arose in regards to how much each indicator contributed to the constructs. Of the 26 social presence indicators coded in

this study, the top three were “compliments or agreement” with 189 instances, “feedback/answer” with 167 instances and “paralanguage” with 100 instances. The least frequently used were “redirect”, “instructions” and “digression” (with 0 instances each) which is predictable since these are behaviors would more likely be manifested by presenters rather than attendees. These numbers indicate that attendees relied significantly on the Interactive Intensity and Affective Association aspects of social presence and very little on Presenter Involvement and the Knowledge & Experience aspects. Table 14 shows a complete ranking of each of the social presence indicators across all of the sessions.

Table 14

Social Presence Indicators Frequency and Percent

Social Presence Indicator	Frequency	Percent
Compliments or Agreement	142	22%
Feedback/Answer	120	18%
Paralanguage	83	13%
Appreciation	71	11%
Inquiry	37	6%
Humor or sarcasm	30	5%
Vocatives	27	4%
Reference to Presenter	22	3%
Offers Help	21	3%
Personal	19	3%
Acknowledgement	19	3%
Professional	17	3%
Greetings or Salutations	7	1%
Self-Disclosure	6	1%
Academic	6	1%
Social Sharing	5	1%
Group References	5	1%
Emotion	4	1%
Additional Resources	4	1%
Disagreement	3	0%
Level	2	0%
Session Contribution	0	0%

Social Presence Indicator	Frequency	Percent
Response to attendee	0	0%
Redirect	0	0%
Instructions	0	0%
Digression	0	0%

Results also indicate that certain indicators were used more frequently than others in a category. In the Affective Association category "paralanguage" was by far the most frequently used social presence indicator with 83 instances (see Figure 5). In the Community Cohesion category, "vocatives" appeared more frequently at 27 instances followed closely by "offers help" at 21 instances (see Figure 6). In the Interaction Intensity category, "compliments or agreement," appeared most frequently with 142 instances followed by "feedback/answer" at 120 (see Figure 7). "Reference to presenter" appeared the most frequently in the Presenter Involvement category with 22 instances (see Figure 8). And lastly, "personal" and "professional" were the most frequent indicators for the Knowledge & Experience category with 19 and 17 instances respectively (see Figure 9).

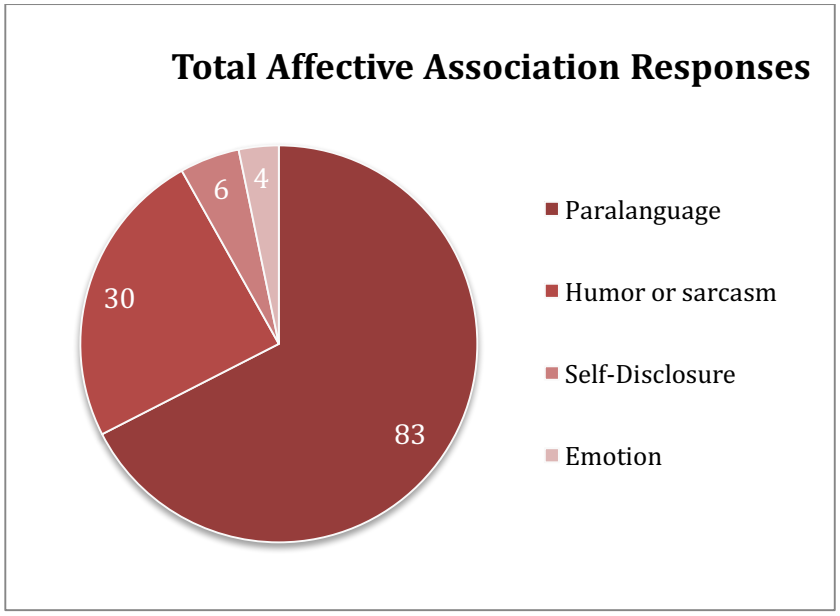


Figure 5. *Social presence indicators by total Affective Association category.*

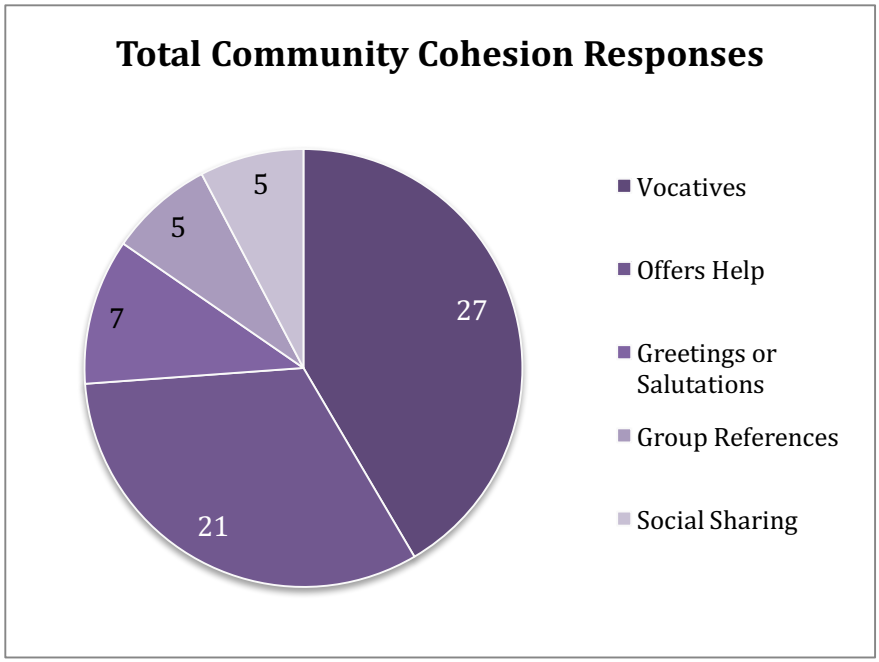


Figure 6. Social presence indicators by total Community Cohesion category.

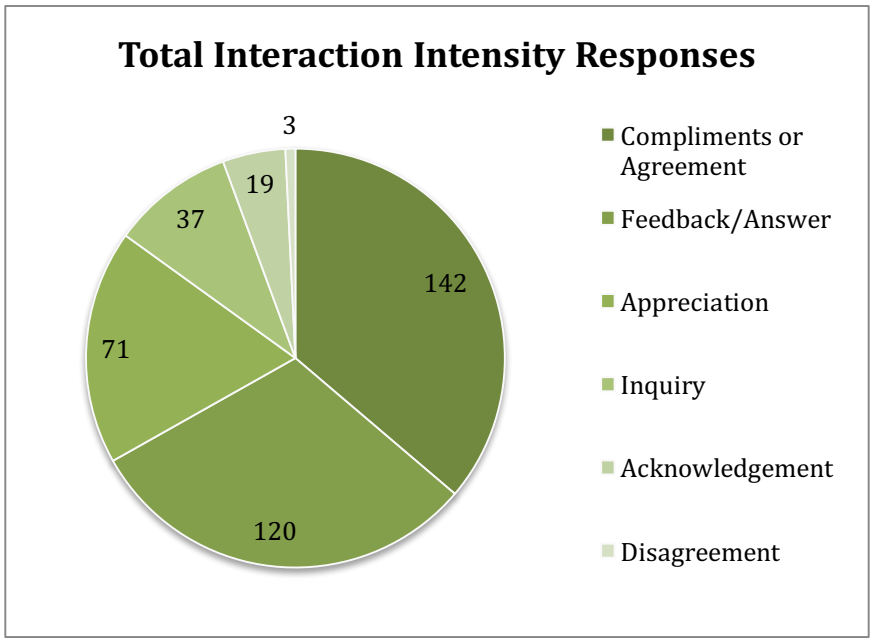


Figure 7. Social presence indicators by total Interaction Intensity category.

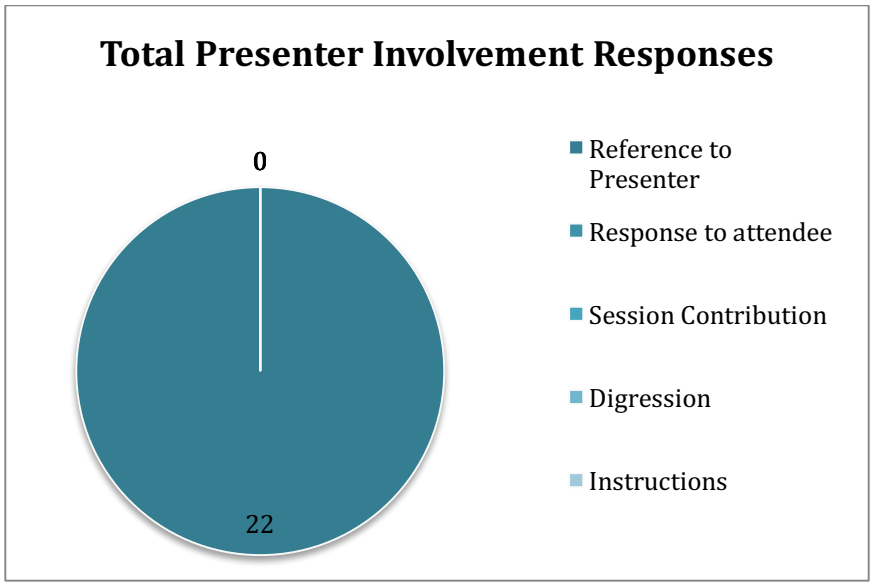


Figure 8. Social presence indicators by Presenter Involvement category.

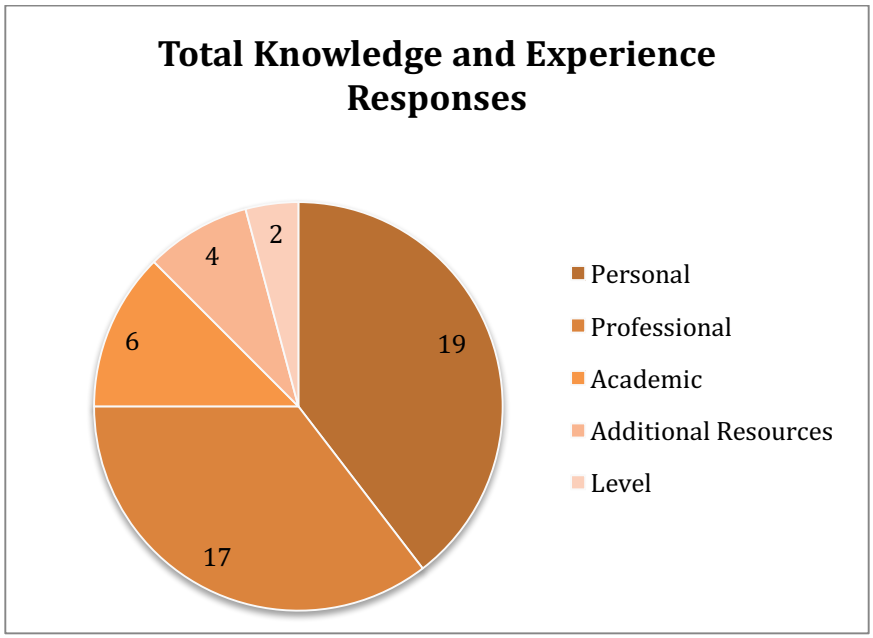


Figure 9. Social presence indicators by total Knowledge & Experience category.

Stage 2: Explore Social Presence Indicators in each Case

Lowenthal (2012) also suggested drilling down and looking at the occurrence of social presence indicators was within each activity where the interaction occurred. In this study, this involved examining individual cases for sessions.

Determining the level of social presence involved a calculation called the *Social Presence Density*. Social Presence researchers Rourke et al., (1999) created this index to indicate the level of social presence in relation to the total number of words coded. The index allowed for more meaningful comparison of cases.

In Table 15, SP Indicators represent the total number of social presence indicators across all 26 indicators for the six cases identified as Case A through Case F. The unit of analysis was at the message or chat post level.

Table 15

Total Messages, Words, Social Presence Indicators and Density Per Case

Case	Total Chat Posts	SP Indicators	SP Density
A	26	25	96
B	194	206	106
C	70	174	249
D	69	80	116
E	81	90	111
F*	68	77	113
Totals	508	652	791
Average (Mean)	84.67	108.67	131.83

Note: Case F* is a 20-minute presentation

Out of the six cases, Case C had the highest social presence density (249), while Case A had the lowest social presence density (96). Case F, although only a 20-minute session, had a higher social presence density (113), than 45-minute presentations (Case A, B, and E).

The researcher decided to look deeper at the social presence density across all chat posts. Table 16 shows these results. For each case, the data provided includes the number of total chat posts, the number and raw score (in parenthesis) for each social presence category, the total number of social presence categories manifested, and average social presence category per post.

Table 16

Average Social Presence Categories per Case

Cases	Total Chat Posts	Affective Association	Community Cohesion	Interaction Intensity	Presenter Involvement	Knowledge& Experience	Social Presence/ Avg. Per Post
A	23	8 (0.35)	2 (0.09)	13 (0.57)	0 (0.00)	2 (0.09)	25 (1.09)
B	194	68 (0.35)	12 (0.06)	110 (0.57)	6 (0.03)	11 (0.06)	207 (1.07)
C	70	13 (0.19)	19 (0.27)	117 (1.67)	11 (0.16)	11 (0.16)	174 (2.49)
D	69	12 (0.17)	14 (0.20)	43 (0.62)	2 (0.03)	6 (0.09)	77 (1.12)
E	81	14 (0.17)	13 (0.16)	43 (0.53)	4 (0.05)	16 (0.20)	90 (1.11)
F*	68	7 (0.10)	5 (0.07)	63 (0.93)	0 (0.00)	2 (0.03)	77 (1.13)

Note: Case F* is a 20-minute presentation

The results were very similar for most of the cases except for Case C. On average, all the cases had at least one coding of social presence of some kind per chat post regardless of the number of posts in the session. Social presence was manifested in all six presentations and it was predominantly observed in the Interaction Intensity category with at least half of the chat posts coded as such. Affective Association was the next most coded category on average. The least coded was Presenter Involvement due to very few of those indicators being manifested by attendees. Case C had, on average, 2.49 codes per post while Case B had 1.07, even though Case C had less than half the chat posts. These differences could likely be due to a combination of the number of attendees in these sessions and the topic of each presentation that required interaction, cohesion, and affective responses.

Stage 3: Examine Social Presence Indicators in Each Case by each Presenter

In the final stage of the transcript content analysis, the researcher examined case, analyze the presenter's behaviors from recordings of their presentations. Since the recordings captured the entire virtual environment and experience, including the presenter's PowerPoint presentations, interaction on the whiteboard, group activities (e.g., polls, desktop sharing, text chat, audio chat), the researcher coded the video recordings of the presentations for all

manifestations of social presence behaviors using MAXQDA+. The multimedia browser within MAXQDA+ made it possible to code the recorded presentations using the same method as the text based chat messages. This approach revealed how social presence was manifested in the volume and patterns of interaction by the presenter(s) in each session.

Additional codes were included for the transcript content analysis for presenters that were not included for attendees. Since social presence indicators could be said aloud during the presentation as well as written into the chat box, the researcher needed to distinguish the two. Chat Post (CP) indicators were included in the coding key. For instance, when something funny was said aloud by the presenter, the video recording was tagged with the Humor/Sarcasm indicator. Similarly, when the presenter wrote something funny into the chat box, the video recording was tagged with CP Humor/Sarcasm.

Case A - Presenter 10

The researcher examined how Presenter 10 manifested social presence in the volume and patterns of her interaction and behavior. Through transcription and coding of the 45-minute recorded presentation, the researcher was able to get an in-depth look at how the presenter demonstrated the five social presence categories and sub-codes or indicators. Presenter 10 was also interviewed in this study, with the analysis of that discussion examined later in this chapter.

The presentation began with 25 attendees and ended with 27, with three attendees doing the majority of the posting in the chat box. Most of the attendees, although present in the session, were not active participants even during the two interactive activities that Presenter 10 engaged them in during her talk. To measure the degree of interactivity between Presenter 10 and the attendees, the sum of postings in a 45-minute session was tabulated using the five social presence codes. The recorded session indicated that the Presenter 10 presented for only 29:35 minutes. The researcher also observed that Presenter 10 did not personalize her presentation with an

avatar. Blackboard allows presenters to add an image that they would like to use to represent themselves throughout the session. Instead, attendees saw a depersonalized grey icon as Presenter 10's online persona. Table 17 provides a summary of the social presence data that was captured of the case study analysis.

Table 17

Social Presence Codes and Indicators of Presenter 10 in Case A

Code	Indicator	Frequency	Percentage
Affective Association		3	10%
	Self-disclosure	1	3%
	Paralanguage	0	0%
	Humor/Sarcasm	2	7%
	Emotion	0	0%
Community Cohesion		6	20%
	Group Reference	3	10%
	Social Sharing	0	0%
	Vocatives	3	10%
	Greetings/Salutations	0	0%
	Offers Help	0	0%
Interaction Intensity		10	33%
	Acknowledgement	0	0%
	Appreciation	6	20%
	Compliments or Agreement	3	10%
	Inquiry	1	3%
	Feedback/Answer	0	0%
	Disagreement	0	0%
Presenter Involvement		3	10%
	Response to attendee	0	0%
	Instructions	3	10%
	Session Contribution	0	0%
	Digression	0	0%
	Redirect	0	0%
Knowledge & Experience		8	27%
	Additional Resources	5	17%
	Professional	1	3%
	Personal	1	3%
	Academic	1	3%
	Level	0	0%
		30	100%

A total of 30 instances of social presence indicators were coded in Case A. With 10 instances (33%) in the Interaction Intensity code, Presenter 10 seemed most proficient in manifesting this social presence category. The presenter demonstrated the highest level of indicating appreciation (20%), complimenting or showing agreement (10%), and asking attendees questions (3%). No manifestations of acknowledgement or feedback were found, however. These are both indicators in the Interaction Intensity category that were often displayed by other presenters who were also high in that category. Although Presenter 10 did conduct two activities where she used the polling feature to gain quick knowledge checks and survey the attendees, she did not publish the results and discuss them with the attendees, thus missing an opportunity to acknowledge or provide feedback on what the results indicated.

The second most often manifested category was Knowledge & Experience, which was manifested eight times or 27% of the total social presence demonstrated in this session. Presenter 10 provided additional resources about her topic five times (17%) and referred once each to her professional, academic, and personal experience.

Unfortunately, the recording of this session was not activated at the very beginning to capture the chat box conversations that may have occurred between attendees with each other and attendees with the presenters upon entering the session, thus missing the opportunity to code for greetings and salutations that would fall under Community Cohesion, the third most manifested of the social presence indicators. Additionally, Blackboard Collaborate recordings do not capture private chat conversations either, missing a possible opportunity for coding other instances of social presence.

The least manifested of the social presence categories were Affective Association (3%) and Presenter Involvement (3%). Expressions of emotions or paralanguage, examples of

Affective responses were not behaviors that Presenter 10 expressed, although she did demonstrate a little humor and self-disclosure in her tone of voice when she admitted to wanting to show a live screen sharing of a web site and being afraid that it would "go wrong" during her presentation. Additionally, of the five indicators in the Presenter Involvement category, only the instructions indicator (10%) was manifested in Presenter 10's presentation when she conducted the interactive activity and explained to attendees how to use the polling tool in Blackboard Collaborate.

Figure 10 is a map portraying Case A at the center of the analysis. The purpose of this visualization is to make the social presence codes and indicators for the selected case accessible. Social presence network analysis explores the connections between the presenter and the most common social presence behaviors. The various indicators are connected to the text by lines with seven levels of thickness. The thickness of each line is defined by the number of text segments coded with the particular code – the thicker the line, the higher the number of coded segments.

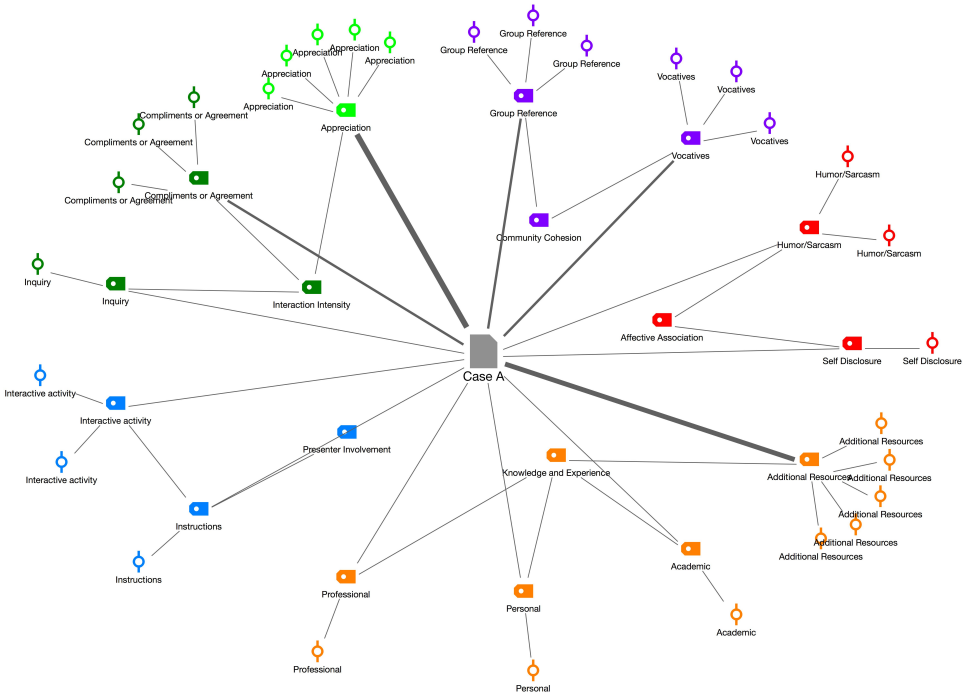


Figure 10. Map of Case A depicting all social presence codes and indicators.

Case A is in the center of the map as a document icon. Around the document are the codes and the coded segments of every code. The lines between the document and the codes are of different width. The width corresponds to the importance of each code, which in Case A was Interaction Intensity followed by Knowledge & Experience.

Case B - Presenter 04 and Presenter 11

Presenter 04 and Presenter 11 manifested all of the social presence categories with a total of 226 indicators and the highest level of social presence of all six presentations analyzed in this study. Therefore, in order to capture the versatility of the presenters' presence in this session, and to understand the presentation experience in this online environment, the researcher first observed what was happening with the non-linguistic aspects of the session. The researcher observed that Presenters 04 and 11 personalized their presentation by adding images of themselves in their profiles, thus providing attendees with online personas of the two speakers. Presenter 04 and Presenter 11 created a presentation that was rich with data, stories, humor, and personal experiences. With a total of 83 slides, the presenters relied on fast paced visual images to convey their information to the participants who attended their presentation. The session began with 13 participants identified in the chat box and ended with 17 participants in attendance, with four attendees leaving at various times throughout the presentation. Of the 17 participants, 10 were active and engaged, posting multiple messages besides a "thank you" at the end of the presentation.

To measure the degree of interactivity between the presenters and the attendees, the sum of the behaviors manifested in this 45-minute session was tabulated using the five social presence codes. Table 18 provides a summary of the social presence data that was captured of the case study analysis.

Table 18

Social Presence Codes and Indicators of Presenters 04 and 11 in Case B

Code	Indicator	Frequency	Percentage
Affective Association		88	39%
	Self-disclosure	0	0%
	Paralanguage	42	19%
	Humor/Sarcasm	10	4%
	CP Humor/Sarcasm	6	3%
	Emotion	30	13%
Community Cohesion		28	12%
	Group Reference	2	1%
	Social Sharing	5	2%
	CP Social Sharing	2	1%
	Vocatives	15	7%
	CP Vocative	1	0%
	Greetings/Salutations	1	0%
	CP Offers Help	2	1%
	Offers Help	0	0%
Interaction Intensity		68	30%
	Acknowledgement	22	10%
	CP Acknowledgement	7	3%
	Appreciation	3	1%
	Compliments or Agreement	12	5%
	CP Compliments or Agreement	2	1%
	Inquiry	15	7%
	CP Inquiry	1	0%
	Feedback/Answer	3	1%
	CP Feedback/Answer	3	1%
	Disagreement	0	0%
Presenter Involvement		4	2%
	Response to attendee	0	0%
	Instructions	2	1%
	Session Contribution	0	0%
	Digression	2	1%
	Redirect	0	0%
Knowledge & Experience		38	17%
	Additional Resources	5	2%
	CP Additional Resource	20	9%
	Professional	8	4%
	CP Professional	1	0%

Code	Indicator	Frequency	Percentage
	Academic	1	0%
	Level	0	0%
	Personal	3	1%
		226	100%

The results for Case B show that Presenter 04 and Presenter 11 were more proficient at employing certain codes or categories of social presence behaviors. And of the categories they manifested, not all the indicators were used indicating that they may not be proficient or comfortable with each indicator related to the category of social presence communication.

The two most often manifested categories were Affective Association, which was manifested 88 times or 39% of the total social presence demonstrated in this session, and Interaction Intensity, which was manifested 68 times or 30% of the total social presence demonstration in this session. The presenters were very active in showing their enthusiasm for the topic and for the interaction they were having with the attendees in their session, which was coded as an emotion indicator (i.e., employs conventional expressions of emotion, or unconventional expressions of emotion). Figure 11 shows a snapshot of the coding of emotion indicators demonstrated during the presentation. The presenters used humor to keep the presentation informal and personal. Presenter 11 manifested paralanguage often (21 instances) within the chat box while Presenter 04 was speaking. Presenter 11 demonstrated this via emoticons and acronyms such as LOL (i.e., laugh out loud).

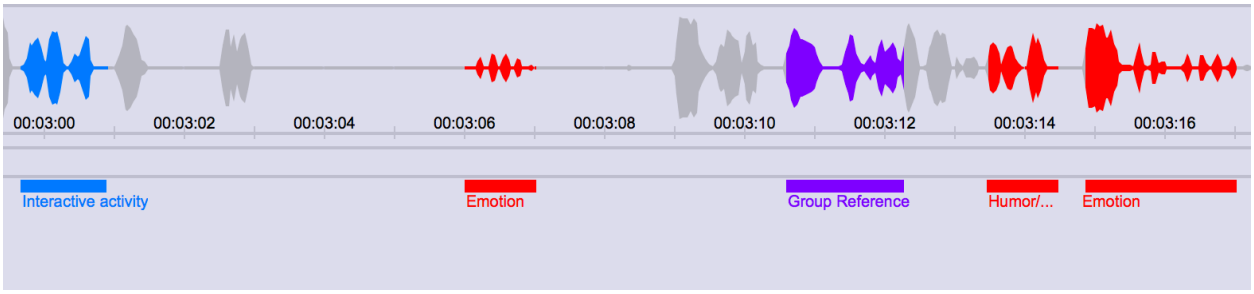


Figure 11. *Snapshot of audio coding for Case B.*

Presenter 04 and Presenter 11 also manifested the highest levels of interacting with the attendees both verbally and via chat messages. They regularly asked attendees questions throughout the presentation (7%), showed agreement or complimented the attendees (7%), and acknowledged/referenced attendee posts (14%). The co-presenters were proficient in engaging the audience by posting images on the whiteboard and asking participants to respond with the name of the software that produced them. This gave presenters an opportunity to discuss the software and how it could be used with students and how the presenters and their colleagues were utilizing innovative ways to use the software in the classroom. Each time an attendee wrote an answer in the chat box, the presenters were immediate in providing agreement or acknowledgement, oftentimes using the attendee's name (7%), the vocative indicator that helps to create Community Cohesion.

The presenters provided 25 additional resources (e.g., URLs and publications) throughout the presentation, which is one of the indicators of Knowledge & Experience, the third most manifested category. As one presenter was speaking, the other was managing the chat box and posting links to various resources that their counterpart was discussing. The combination of providing examples from their professional development experiences (4%) with the additional resources (12%) dominated the approach they used to convey their information. In fact, one of the presenters stated, "We try to promote everybody" when they were sharing an experience of how a colleague used a certain software to teach her students in an unconventional way.

Figure 12 is a map portraying Case B at the center of the analysis with an intricate web of codes indicating this presentation. This social presence network analysis allowed for the exploration of connections between the presenters and the social presence behaviors manifested the most.

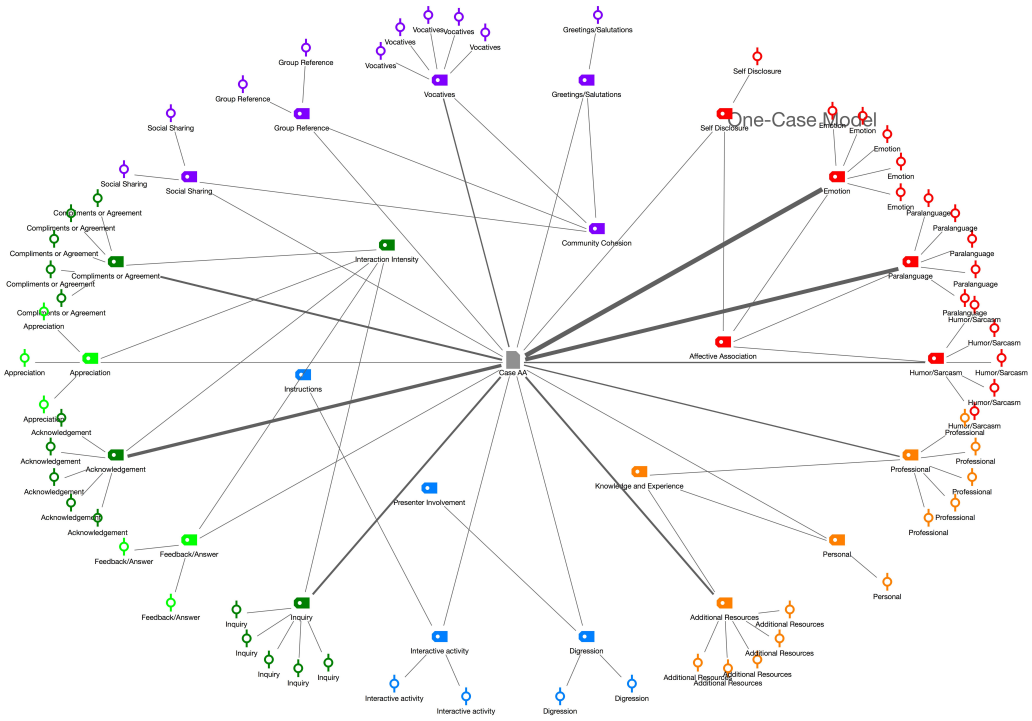


Figure 12. *Map of Case B depicting all social presence codes and indicators*

An observation that was difficult to code was the symbiotic relationship between the two presenters. They had the same level of knowledge and experience within their area of expertise as well as a high level of enthusiasm and unabashed manner of presenting not normally witnessed by the researcher. They participated as both attendees and presenters so that when one was presenter was speaking the other was participating as an audience member in the chat box and helping to rally enthusiasm and add to the chat comments. Unfortunately, the recording for this session did not start or end at the actual beginning and closing of this presentation that would have captured the greetings and salutations that undoubtedly were part of the Community Cohesion that took place. Note: Presenter 04 was interviewed for this study, although Presenter 11 was not.

Case C - Team C

The researcher examined how a team of four co-presenters from the same university manifested social presence in the volume and patterns of interaction and behavior in Case C.

None of the speakers personalized the presentation with an avatar or real photo image of themselves. They appeared as white-headed grey icons in both the audio/video panel as well as in the participant panel throughout the session. Presenter 01, who was also interviewed in this study, was part of this team of presenters (referred to as Team C in this study). Sixty-four attendees were present at the start of Team C's presentation, with 24 additional attendees entering at various times throughout the session for a total of 88 participants. However, only about a third of the attendees (28) were active and posted between two to nine posts apiece while the other two thirds were present in the session but did not participate.

Similar to the other cases in this study, the results for Team C showed that they were proficient at employing certain codes or categories of social presence behaviors more than others. And of the categories they manifested, not all the indicators were used indicating that Team C may not be proficient or comfortable with each indicator related to the category of social presence communication.

To measure the degree of interactivity between Team C and the attendees, the sum of the behaviors manifested in the 45-minute session was tabulated using the five social presence codes. Table 19 provides a summary of the social presence data that was captured of the case study analysis.

Table 19

Social Presence Codes and Indicators of Team C in Case C

Code	Indicator	Frequency	Percentage
Affective Association		6	4%
	Self-disclosure	0	0%
	Paralanguage	0	0%
	Humor/Sarcasm	3	2%
	Emotion	3	2%

Code	Indicator	Frequency	Percentage
Community Cohesion		64	42%
	Group Reference	38	25%
	Social Sharing	3	2%
	CP Social Sharing	1	1%
	Vocatives	9	6%
	CP Vocative	10	7%
	Greetings/Salutations	3	2%
	Offers Help	0	0%
Interaction Intensity		45	30%
	Acknowledgement	8	5%
	CP Acknowledgement	1	1%
	Appreciation	14	9%
	CP Appreciation	3	2%
	Compliments or Agreement	5	3%
	CP Compliment or Agreement	9	6%
	Inquiry	2	1%
	CP Inquiry	1	1%
	Feedback/Answer	0	0%
	CP Feedback/Answer	2	1%
	Disagreement	0	0%
Presenter Involvement		4	3%
	Response to attendee	0	0%
	Instructions	4	3%
	Session Contribution	0	0%
	Digression	0	0%
	Redirect	0	0%
Knowledge & Experience		32	21%
	Additional Resources	13	9%
	Professional	9	6%
	Academic	4	3%
	Level	5	3%
	Personal	1	1%
		151	100%

With 64 (42%) instances out of a total of 151 social presence indicators coded, Team C was most proficient with Community Cohesion. The presenters manifested the highest levels of creating a sense of community with the participants in their session through greetings and salutations (2%), social sharing (3%), vocatives (13%), and group reference (25%). Each

presenter in this session seemed to make it a point to refer to the session attendees as “we”, “us”, or “our” when they were presenting on their specific topic. Referring to the participants with statements like “As instructors, we must ensure…” and “Consider how direct we are in our comments…” were cohesive responses that may have helped to build and sustain a sense of group connection.

Forty-five instances (30%) of Interaction Intensity occurred for Team C, with the most occurring verbally and in the chat box. The presenters were active in acknowledging attendees and adding to their comments (6%), complimenting or agreeing with attendees (9%), and showing appreciation (11%). Besides remarks such as “I agree! That's awesome”, comments such as, “That is so interesting, [redacted]! Were there any particular methods you found helpful?” were ways that the presenters acknowledged the attendee’s post and tried to engage them in further discussion.

Knowledge & Experience was the third most manifested of the social presence categories. In the case of Team C, this category was demonstrated by the presenters sharing their personal (1%), academic (3%), level (3%) and professional (6%) backgrounds with the session attendees. An example of one of the presenters manifesting multiple indictors in the Knowledge & Experience category can be seen in the following statement: “I started with the University of [redacted] [professional] back in 2008 as an adjunct instructor [academic] after earning my master’s degree [level].” Team C provided additional resources (9%), including references to other scholars and publications as in-text citations on their slides, verbally during their talks, and in a reference list slide at the end of their presentation.

Affective Association behaviors might be thought of as ways of projecting personal expressions in online communication. They are personal expressions of emotion, feelings,

beliefs, and values. The presenters were more formal in their presentation and set the tone for a session that was highly academic and structured. Not surprisingly, Affective Association behaviors were the least commonly used category (4%) manifested by Team C.

An interesting observation that the researcher made was the absence of interaction in the chat box between the co-presenters and the attendees while another presenter was speaking. For example, one presenter in Team C had the microphone and asked a question with several of the attendees responding in the chat box but the presenter did not see their responses and the co-presenters did not acknowledge that the attendees had responded. A second example occurred when a presenter acknowledged some but not all of the chat messages posted by attendees during her interactive activity. The co-presenters did not post in the chat box in response to the attendees' messages that had not been acknowledged aloud so that the attendees could have sensed that the messages had been read. Just as a participant in a face-to-face conference would feel discounted had their question or comment not been addressed, so do online participants feel ignored, a reaction that was referenced during the online interviews conducted with TCC attendees. During the interview phase of the study, attendees were divided on whether it was better for presenters to respond to questions or comment on attendee posts by posting to the chat box themselves versus acknowledging the questions and responding to comments aloud during the session. What attendees seemed to convey in their responses, is that regardless of what method was chosen, presenter and co-presenters should pay attention and responding to attendees' questions and comments in the chat box. Figure 13 is a map portraying Case C at the center of the analysis. Community Cohesion had the highest number of coded segments

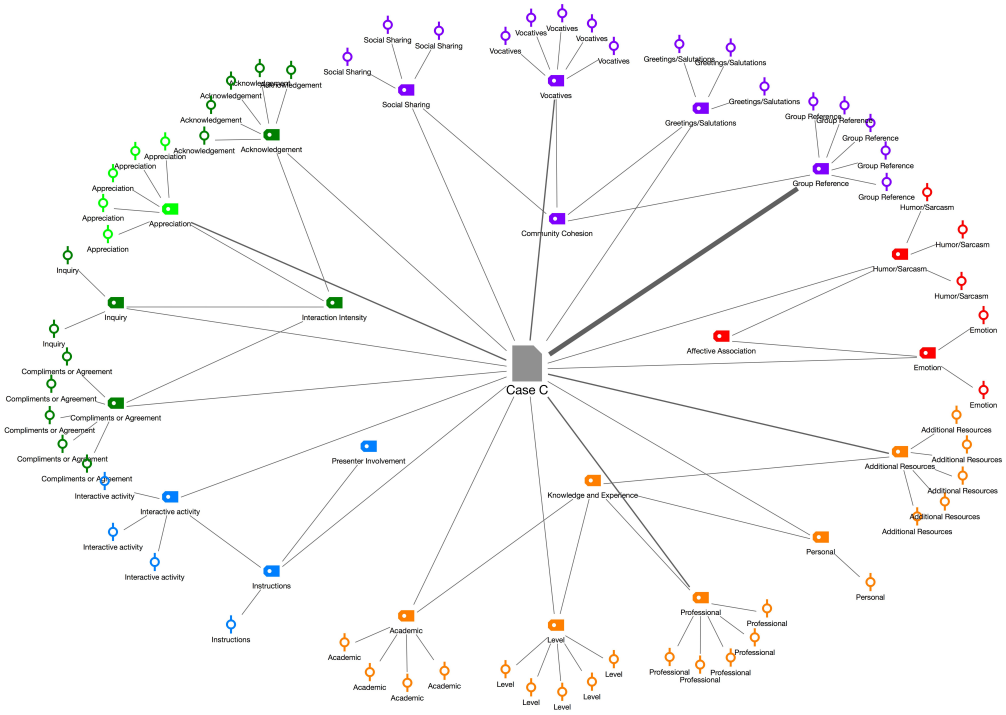


Figure 13. Map of Case C depicting all social presence codes and indicators.

Case D - Team D

In this 45-minute presentation, 15 attendees were present in the beginning and 27 at the end, with 8 actively posting messages in the chat box. One particular attendee had 38 posts out of 65 in the chat box, which the researcher assumed was due to a keen interest in the session topic. The session was predominantly supported by the presenters speaking on the subject matter with no interactive activity (polling, posting to the white board, break-out groups, etc.) to engage the audience and only six bullet-point slides throughout the entire presentation. The researcher also observed that only one presenter out of the four included a professional image of himself that appeared whenever he took the microphone. The other three had the generic white-headed grey icon to represent themselves.

To measure the degree of interactivity between Team D and the attendees, the sum of the presenters' postings to the chat box and verbal dialogue in the 45-minute session was tabulated

using the five social presence codes. Table 20 provides a summary of the social presence data that was captured for this case study analysis. Figure 14 is a map portraying Case D at the center of the analysis.

Table 20

Social Presence Codes and Indicators of Team D in Case D

Code	Indicator	Frequency	Percentage
Affective Association		22	21%
	Self-disclosure	3	3%
	Paralanguage	4	4%
	Humor/Sarcasm	7	7%
	CP Humor/Sarcasm	1	1%
	Emotion	7	7%
Community Cohesion		22	21%
	Group Reference	4	4%
	Social Sharing	0	0%
	Vocatives	15	14%
	CP Vocatives	2	2%
	Greetings/Salutations	1	1%
	Offers Help	0	0%
Interaction Intensity		50	47%
	Acknowledgement	4	4%
	CP Acknowledgement	3	3%
	Appreciation	12	11%
	CP Appreciation	2	2%
	Compliments or Agreement	12	11%
	CP Compliments/Agreement	5	5%
	Inquiry	4	4%
	Feedback/Answer	4	4%
	CP Feedback/Answer	4	4%
	Disagreement	0	0%

Code	Indicator	Frequency	Percentage
Presenter Involvement		1	1%
	Response to attendee	0	0%
	Instructions	0	0%
	Session Contribution	0	0%
	Digression	1	1%
	Redirect	0	0%
Knowledge & Experience		12	11%
	Additional Resources	3	3%
	CP Additional Resources	1	1%
	Professional	5	5%
	Personal	1	1%
	Academic	2	2%
	Level	0	0%
		107	100%

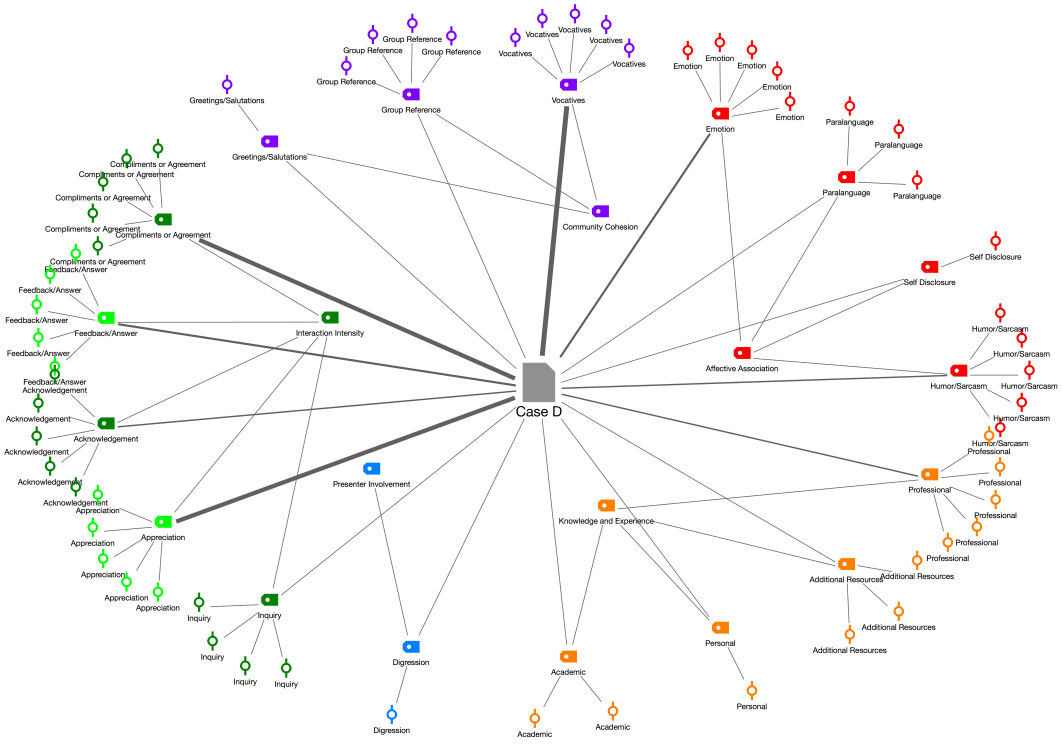


Figure 14. Map of Case D depicting all social presence codes and indicators.

The results for Case D showed that the presenters were more proficient at employing certain codes or categories of social presence behaviors over others. The presenters manifested

Interaction Intensity 47% of the time both verbally and in the chat box with presenters asking if they had any questions they could answer (4%), acknowledging/referencing attendee posts (7%), providing feedback or answers to attendee questions (8%), and equally showing appreciation (13%) and compliments/agreement (16%) for attendees in their presentation. Digging deeper into the audio and chat post analysis of their presentation, one presenter in particular manifested Interaction Intensity by responding to attendee posts while his counterparts were speaking, with comments such as "Thanks for sharing, Kathleen. Great point" and "Sure…happy to. Great question! ☺ ."

It was possible to observe when an attendee posted a comment or question and how long it took for a presenter to respond. Although Interaction Intensity was the most manifested category for the presenters in this case, several occasions occurred when an attendee posted a question to the presenters in the chat box and neither the presenter nor his co-presenters responded to the attendee's question. Later the presenters seemed to become more comfortable with the CMC and began working with each other to monitor the chat box and provide more responses to the attendees.

Occasionally, the presenters had more verbal interaction with each other than with the attendees in their session. They commented during each other's talks, provided examples and support for each other's points, thanked each other after each took the microphone and referred to each other with the more formal form of address (i.e., Dr.) rather than by their first names.

Community Cohesion and Affection Association came in as the second most prevalent categories (21%) manifested by Team D. The majority of the Community Cohesion behaviors supported the use of vocatives (16%). This was done both verbally (14%) and in the chat box (2%). The presenter who seemed to exhibit the most social presence of the team gave an example

of Community Cohesion when he acknowledged the presence of a former colleague in their session while speaking about community building. He mentioned how he could picture her smiling virtually even though he could not see her.

Affective Association was manifested 22 times of the total 107 social presence behaviors manifested in this session. Two of the presenters were active in showing their enthusiasm for the topic and for the interaction they were having with the participants in their session, which was coded as an emotion indicator (i.e., employs conventional expressions of emotion, or unconventional expressions of emotion). They used humor (8%) to keep the presentation entertaining. Paralanguage, via the use of emoticons and such acronyms as LOL (i.e., laugh out loud), was used less frequently (4 instances). Another behavior that was observed and coded under "self-disclosure" (3%) was apologies for the technology problems that one presenter experienced, which kept him from being able to log into the session on time. It seemed he was embarrassed by it although it did not seem to present an issue for the attendees or co-presenters.

The category that was the least demonstrated was Presenter Involvement. As the presentation was mostly lecture style with no activities, the presenters did not need to provide instructions, redirect, or contribute to the session. The behaviors that could have been coded as "response to attendee" were coded under different indicators within Interaction Intensity.

Case E - Presenter 05

In order to capture the nature of the presenter's presence in Case E, and to understand the presentation experience in this online environment, the researcher observed and then coded what was happening with the non-linguistic and linguistic facets of the presentation. Figure 15 shows an example of what frequently occurred in Presenter 05's presentation; seconds of silence. The audio track shows a flat line before audio (e.g., green line) was coded for social presence.

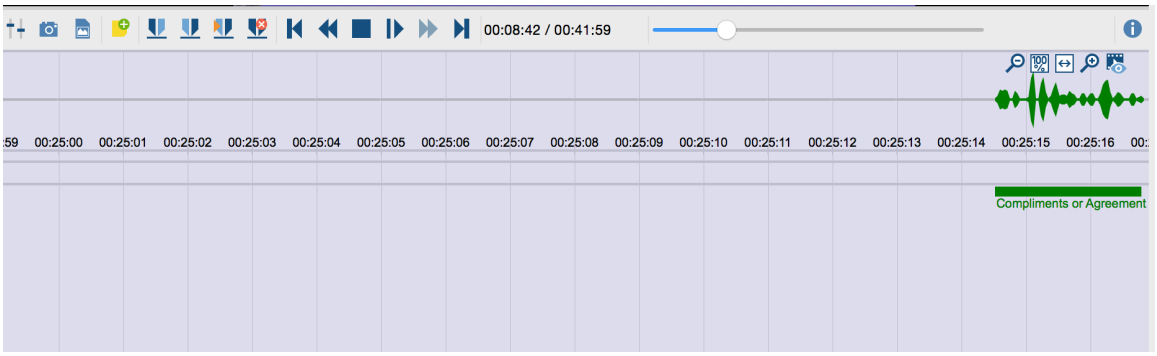


Figure 15. Snapshot of audio track for Case E.

In most presentations, speakers try to avoid silence as time is limited in their availability to convey all the information they are trying to impart to their audience and because silence may not be understood by the attendees. Although no social presence indicator codes for silence, the researcher observed (or more like sensed) the presenter's presence even during these short lapses in conversation. It appeared as if the presenter understood the power of the pause and used it to her advantage as a method for the session attendees to make personal connections with her content as a basis for audience engagement.

Presenter 05 created a presentation that was dominated by interactive exercises with time for reflection (e.g., a moment of silence) after each exercise. With only 18 slides in this 45-minute session, the presenter gave attendees adequate time to think and respond to questions in the chat box rather than filling the presentation with fast-paced slides and dialogue. The researcher observed that the presenter did not use an avatar or an image to create an online persona and relied on the generic Blackboard Collaborate. The session began with eight participants in the chat box and ended with 18 participants in attendance, with 11 active participants. These engaged attendees posted between two to 18 posts in the chat box.

The sum of the behaviors manifested in the 45-minute session was tabulated using the five social presence codes. Table 21 provides a summary of the 143 social presence occurrences

the presenter manifested that were coded in this case study analysis. Figure 16 is a map portraying Case E at the center of the analysis showing the dominant social presence behaviors manifested by the presenter. This social presence network analysis allowed for the exploration of connections between the presenter and the social presence behaviors manifested the most.

Table 21

Social Presence Codes and Indicators of Presenter 05 in Case E

Code	Indicator	Frequency	Percentage
Affective Association		14	10%
	Self-disclosure	1	1%
	Paralanguage	0	0%
	Humor/Sarcasm	8	6%
	Emotion	5	3%
Community Cohesion		35	24%
	Group Reference	7	5%
	Social Sharing	5	3%
	Vocatives	22	15%
	Greetings/Salutations	0	0%
	Offers Help	1	1%
Interaction Intensity		66	46%
	Acknowledgement	15	10%
	Appreciation	9	6%
	Compliments or Agreement	31	21%
	Inquiry	8	6%
	Feedback/Answer	3	2%
	Disagreement	0	0%
Presenter Involvement		4	3%
	Response to attendee	4	3%
	Instructions	4	3%
	Session Contribution	0	0%
	Digression	0	0%
	Redirect	0	0%

Code	Indicator	Frequency	Percentage
Knowledge & Experience		24	17%
	Additional Resources	7	5%
	CP Additional Resources	3	2%
	Professional	3	2%
	Personal	4	3%
	Level	0	0%
	Academic	7	5%
		143	100%

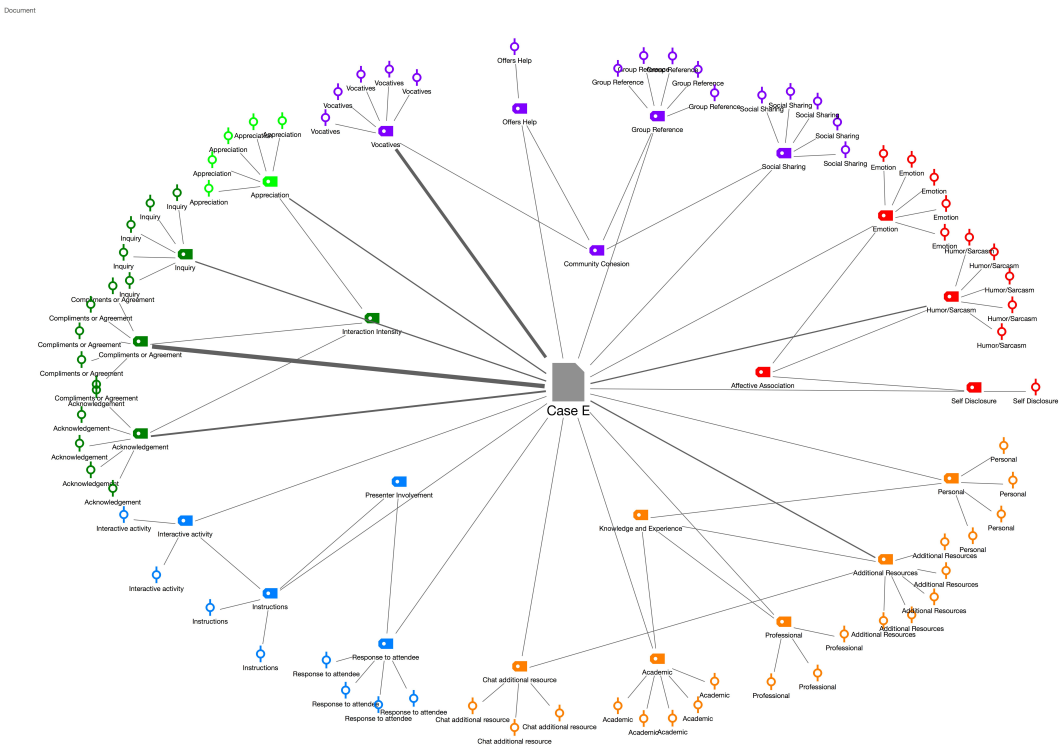


Figure 16. Map of Case E depicting all social presence codes and indicators.

With 143 instances of social presence, Presenter 05 was most proficient at Interaction Intensity (46%), the highest levels of interacting were exhibited with the participants asking others for questions (6%), showing appreciation (6%), and acknowledging/referencing attendee posts (10%) in the presentation. The presenter provided opportunities for dialogue through several exercises to elicit attendee discussions. As each attendee posted feedback, the presenter

complimented or agreed with the attendee (22%). Presenter 05 manifested Interaction Intensity by verbally responding to attendee posts with comments such as "That's another great suggestion, Peter", and "Yes, that's a wonderful activity!" Using names when asking students to explain their rationale or posing questions to them during an online course is an important method and an example of Community Cohesion (Whiteside, 2015). Vocatives, (e.g., addressing or referring to participants by name), was the second most manifested indicator with 22 (15%) instances of the presenter demonstrating this social presence behavior. Community Cohesion was also manifested in this session with Presenter 05 using group reference (5%) such as "Let's share a little bit about you", and "I want to make sure we cover all that here."

The least manifested of all the social presence codes was Presenter Involvement (3%) due to the researcher coding the manifestations of responding to attendees under other indicators that seemed more appropriate in the Interaction Intensity category. Also, several of the presenter's statements were difficult for the researcher to know how to code within the social presence model. They related to the presenter asking the attendees to share tools and other exercises to learn from them. This perhaps could have been coded as inquiry, which relates to the presenter requesting ideas from attendees without asking questions and shows more openness and vulnerability by the presenter than mere curiosity. Attendees were also encouraged to connect with the presenter after the conference.

Case F - Presenter 03

In the only 20-minute presentation analyzed in this study, the session manifested an average level of social presence when compared to the 45-minute sessions and the highest level of social presence when compared to five other 20-minute presentations being considered. The purpose of including a 20-minute session was to examine what factor time played for both presenter and attendees in manifesting their social presence.

Presenter 03, who was also interviewed for this study, created a presentation that was dominated by images rather than text. However, the researcher observed that the presenter did not use an avatar or an image and relied on the generic Blackboard Collaborate avatar. With only 11 slides used, the presenter relied on visual images to convey information to the attendees in her session. The session began with 24 attendees identified in the chat box and ended with 39 individuals in attendance, with seven attendees leaving at various times throughout the presentation. Of the 39 attendees, 14 were active, posting at least two or more messages in the chat box.

Table 22 provides a summary of the 84 social presence data that was captured in this case study analysis. Figure 17 is a map portraying Case F at the center of the analysis. This social presence network analysis allowed for the exploration of connections between the presenter and the social presence behaviors manifested the most.

Table 22

Social Presence Codes and Indicators of Presenter 03 in Case F

Code	Indicator	Frequency	Percentage
Affective Association		2	2%
	Self-disclosure	1	1%
	Paralanguage	0	0%
	Humor/Sarcasm	0	0%
	Emotion	1	1%
Community Cohesion		34	40%
	Group Reference	18	21%
	Social Sharing	0	0%
	Vocatives	16	19%
	Greetings/Salutations	0	0%
	Offers Help	0	0%
Interaction Intensity		31	37%
	Acknowledgement	14	17%
	Appreciation	5	6%
	Compliments or Agreement	5	6%
	Inquiry	2	2%
	Feedback/Answer	5	6%

Code	Indicator	Frequency	Percentage
	Disagreement	0	0%
Presenter Involvement		5	6%
	Response to attendee	1	1%
	Instructions	4	5%
	Session Contribution	0	0%
	Digression	0	0%
	Redirect	0	0%
Knowledge & Experience		12	14%
	Additional Resources	8	10%
	Professional	2	2%
	Academic	2	2%
	Level	0	0%
	Personal	0	0%
		84	100%

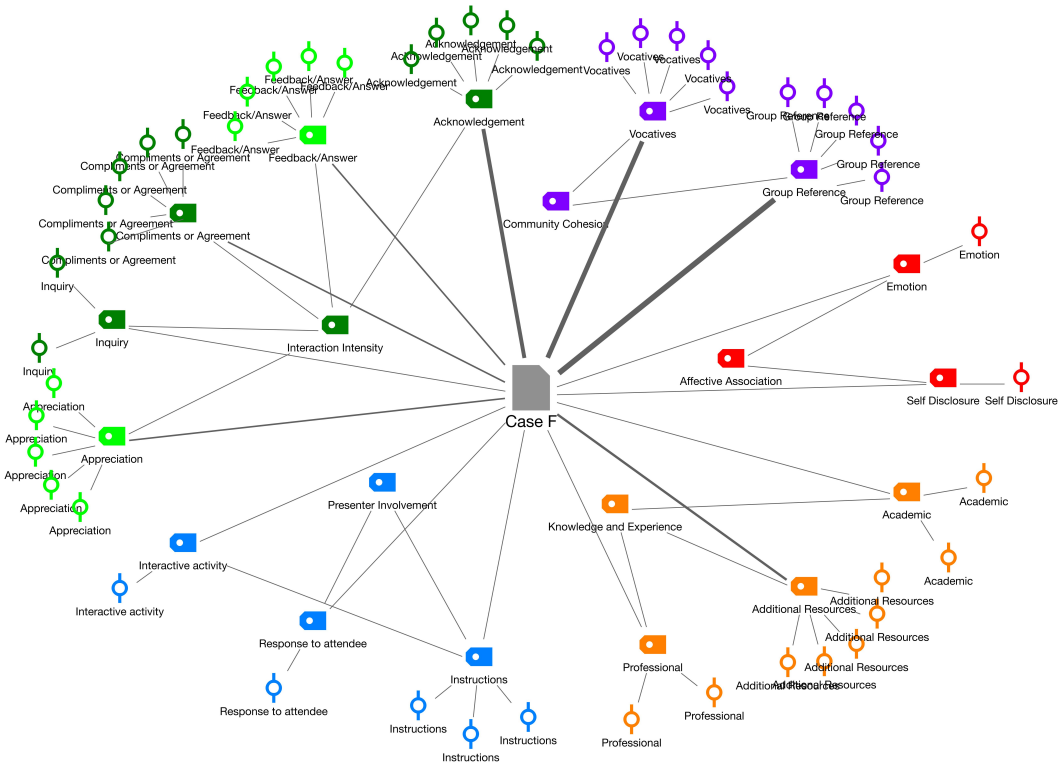


Figure 17. Map of Case F depicting all social presence codes and indicators.

The results showed that Presenter 03 was more proficient at employing certain codes or categories of social presence behaviors than others. And of the categories manifested, not all the

indicators were used indicating that a lack of proficiency each indicator related to the category of social presence communication. Presenter 03 was most proficient at Community Cohesion (40%). As each attendee posted an answer or a question in the chat box, the attendee was acknowledged by saying their name aloud. Using a student's name when asking them to explain their rationale or posing questions to them during an online course is an important method and an example of Community Cohesion (Whiteside, 2015). The presenter responded to attendee posts with verbal comments such as "Perfect. That's great Dana" and "Thank you Greg and Betty, yes!" Group referencing was also another indicator Presenter 03 used often throughout the presentation, addressing the session community as 'we', 'us', or 'our'. Statements such as "We have a great group out there", "When we give feedback to our students, because that is what we do consistently…", and "We don't get a lot of results from the coaching that we do" were made.

Interaction Intensity (37%) was the second highest level of interaction with Presenter 03 asking attendees if they had any questions (2%), showing agreement (6%), appreciation (6%), and acknowledging/referencing attendee posts (17%). The presenter would often refer to something in the text that made the attendees aware whose post was being remarked about. The presenter provided opportunities for discussion via several engaging questions to elicit attendee interaction, which were read and responded to quickly.

Presenter 03 provided a list of additional resources (10%) for attendees and provided a contact email in the chat box, encouraging attendees to send question or requests. This was the one and only time the presenter posted in the chat box. Indicators that were professional and academic in nature were coded when Presenter 03 discussed work experience outside the online conference experience (2%) and prior knowledge (2%).

In terms of Presenter Involvement, Presenter 03 provided instructions for several interactive activities with one specifically using technology. Using the digital polling tool built into the Blackboard Collaborate software, attendees were asked to indicate whether they had heard of an important resource. The presenter took time to explain to attendees how to use the polling feature to provide a collaborative learning experience with their participants by having attendees be active themselves.

Interestingly, Presenter 03 manifested the affective indicators of social presence only twice in her 20-minute session. No emoticons or paralanguage in the chat posts or humor was used. An instance of emotion and another disclosing an example of personal information were the only affective indicators manifested. However, Presenter 03 did share professional experiences that occurred at a university. Other strategies were used to manifest presence as a presenter. However, these strategies were not easily coded leaving the researcher unsure about the social presence category and indicator they manifested. In the researcher's own opinion, Presenter 03 had an effective vocal delivery with both modulation and inflection. Her delivery was low, clear, full, and varied, expressing both emotion and conviction. An additional observation that the researcher made was that Presenter 03 referred to a previous presentation she had attended during the TCC conference; signifying that active participant at the conference.

Constant Comparison Analysis

The researcher decided to conduct constant comparison analysis in order to study the same sources of data through a different data analysis approach. Initially the comparison was to occur between the presentation with the lowest social presence density (Case A) and the presentation with the highest social presence density (Case C). However, Case B was the presentation with the next lowest social presence density that actually had the highest social

presence indicators of all the sessions when analyzed attendee social presence. An intriguing comparison could be made between Case B and Case C.

The entire chat discussion and audio recording for presenters and attendees in each presentation was analyzed again to discover if themes might emerge that told a similar or different account than content analysis results.

The first step involved reading the entire chat post and chunking the text into meaningful units. Each unit was then labeled with a code while constantly comparing new codes with previous ones. Similar units were labeled with the same code, thus allowing for easy grouping of the coded units. The codes were grouped together by similarity so that a theme emerged that could be identified from the data. The same was done for the audio recording for the same case.

Three common themes emerged from the data collected and analyzed. Similarities were found among the two presentations concerning (a) interaction, (b) appreciation, and (c) presenter content delivery and style.

Interaction.

A recurring theme in the data sources was the various forms of interaction. Case B participants predominantly manifested "attendee-presenter" interactions, meaning the attendees interacted directly, both in academic and social chat messages, directly with the presenters more often than with each other. The presenters in Case B guided the attendees through their high energy and fast-paced, image packed PowerPoint presentation. Rather than sentence type messages, attendee chat posts were short two to three word comments acknowledging something that resonated for them about the presenter's discussion. This may have been due to the subject matter discussed in Case B, which was very cutting edge and attendees may have not had as

much to contribute. Some examples of attendee feedback to the presenters posted in the chat box were:

[Attendee chat post]

wow amazing

[Attendee chat post]

Great tool!

[Attendee chat post]

love the hex conversations

Case C, on the other hand, had both attendee-presenter and attendee-attendee interaction throughout their presentation. Attendees in Case C provided numerous personal and professional experiences and opinions to each other and to the presenter. The topics were various pedagogical approaches and attendees could provide much more feedback and comments.

[Attendee chat post]

I didn't realize I was using [redacted] when I created my [redacted] requirements each week to give the students guidance and resources to create an appropriate [redacted].

[Attendee chat post]

Are there any thoughts/concerns about boundary issues with instructors/students using social media? I'm thinking about potential for inappropriate behavior/relationships developing.

[Attendee chat post]

At my school, classes are 7-8 weeks or 10 weeks. I don't use social media to connect with students since we have a build in system for maintaining personal contact and announcements that can act as reminders, summaries, alerts.

Appreciation.

The next recurring theme was the use of the expression "Thank you" to acknowledge the presenters and other attendees during the presentation and at the end of the presentation. The researcher included this expression as a new indicator under the Interaction Intensity category because it became immediately apparent that this was an indicator that needed to be coded differently from "acknowledgement" or "compliments / agreement." Unlike online courses where students are more likely to say or type 'good night' or utter another form of greeting or salutation, presentations are one-time experiences where participants are together for a very short period and 'thank you' is an expression similar to applause at an in-person conference.

Interestingly, attendees and presenters manifested appreciation 54 times in Case C compared to only 8 times in Case B. The reason for this could have been the presentation recording for Case B stopped prior to all the attendees being able to post a thank you to the presenters and because only two presenters who took turns speaking during the 45-minute presentation. In Case C, four presenters took turns speaking so after each was done, attendees would thank them individually. With 88 participants in the session, appreciation was manifested more frequently.

Presenter(s) Delivery and Style of Presenting.

The third theme that was observed was the presenter's distinct style and method of delivering their presentations that engaged the attendees differently. Case B showcased a fast pace presentation where presenters predominantly used images, interactive guessing activities, numerous references to social media and technology tools, and high levels of enthusiasm and humor. Attendees either kept up or got left behind. Presenters in Case B duplicated their postings of additional resources, almost like a face-to-face presenter repeating themselves to be sure the

audience heard them. They showed quite a bit of humor, actually laughing out loud and making the presentation feel like a festive occasion.

Case C was a more traditional style of presenting with the tone and style of an academic conference. The presenters used predominantly text-based slides with citations and numerous examples of good instructional approaches to teaching students in the classroom. All four speakers approached their presentations in a similar style of delivering the content, very much like being in an online graduate level course on educational technology.

Stage 4: Examine Social Presence Indicators Across All Participants

For half of the sessions, social presence behaviors manifested by attendees corresponded to the social presence behaviors of presenters presenting in that session (see Table 23). Overall totals of social presence by presenters and attendees for Case A, Case B, and Case F are very similar with only a difference of between five and seven points.

Table 23

Totals of Social Presence Categories and Indicators Across Cases for Attendees and Presenters

Category and Indicators	Case A		Case B		Case C		Case D		Case E		Case F		Sub total	%
	A*	P**	A	P	A	P	A	P	A	P	A	P		
Affective Association	**8**	**3**	**68**	**67**	**13**	**6**	**12**	**22**	**15**	**14**	**7**	**2**	**237**	**17**
Self-disclosure	0	1	2	0	2	0	0	3	1	1	1	1	12	
Paralanguage	6	0	43	21	10	0	9	4	9	0	6	0	108	
Humor/Sarcasm	2	2	21	16	0	3	2	8	5	8	0	0	67	
Emotion	0	0	2	30	1	3	1	7	0	5	0	1	50	
Community Cohesion	**2**	**6**	**13**	**28**	**19**	**64**	**14**	**22**	**13**	**35**	**5**	**34**	**255**	**19**
Group Reference	0	3	1	2	2	38	1	4	1	7	0	18	77	
Social Sharing	1	0	0	7	0	4	4	0	0	5	0	0	21	
Vocatives	0	3	4	16	10	19	6	17	5	22	2	16	120	
Greetings/Salutations	0	0	3	1	0	3	2	1	3	0	0	0	13	
Offers Help	1	0	5	2	7	0	1	0	4	1	3	0	24	
Interaction Intensity	**13**	**10**	**110**	**68**	**120**	**45**	**43**	**50**	**43**	**66**	**63**	**31**	**662**	**48**
Acknowledgement	1	0	2	29	3	9	6	7	2	15	5	14	93	
Appreciation	5	6	5	3	37	17	3	14	8	9	13	5	125	
Compliments or Agreement	6	3	38	14	39	14	22	17	19	31	18	5	226	
Inquiry	0	1	13	16	3	3	10	4	5	8	6	2	71	
Feedback/Answer	1	0	52	6	35	2	2	8	9	3	21	5	144	
Disagreement	0	0	0	0	3	0	0	0	0	0	0	0	3	
Presenter Involvement	**0**	**3**	**5**	**4**	**11**	**4**	**2**	**1**	**4**	**4**	**0**	**5**	**43**	**3**
Response to attendee	0	0	0	0	0	0	0	0	0	0	0	1	1	
Response to presenter	0	0	5		11		2	0	4	0	0		22	
Instructions	0	3	0	2	0	4	0	0	0	4	0	4	17	
Session Contribution	0	0	0	0	0	0	0	0	0	0	0	0	0	
Digression	0	0	0	2	0	0	0	1	0	0	0	0	3	
Redirect	0	0	0	0	0	0	0	0	0	0	0	0	0	
Knowledge & Experience	**2**	**8**	**10**	**38**	**11**	**32**	**6**	**12**	**16**	**24**	**2**	**12**	**173**	**13**
Additional Resources	0	5	2	25	2	13	0	4	0	10	0	8	69	
Professional	1	1	2	9	4	9	6	5	2	3	2	2	46	
Academic	0	1	0	1	2	4	0	2	3	4	0	2	19	

Category and Indicators	Case A		Case B		Case C		Case D		Case E		Case F		Sub total	%
Level	1	0	1	0	0	5	0	0	0	0	0	0	7	
Personal	0	1	5	3	3	1	0	1	11	7	0	0	32	
	25	30	206	205	174	151	77	107	91	143	77	84	1370	100

Note: A* = Attendees and P** = Presenters

Presentation of Data and Findings for Research Question 2

Survey Results

Fifty-one, out of a total of 226 conference participants in the six sessions, responded to the survey. The online survey was viewed 126 times, which, according to QuestionPro, is "the total number of users who click on the link for the Survey" (QuestionPro Online Survey Software, n.d.). The survey took an average of seven minutes to complete, and was completed by participants from three countries; the United States, American Samoa and Australia. In the United States, participants from three states had the highest response rates: Arizona (26%), Hawaii (24%), and Colorado (12%). Participants from Wisconsin, Florida, Nebraska, Alabama, Washington, North Carolina, New Jersey, California, Texas, Washington DC, Montana, and Arkansas also responded. Figure 18 depicts an image with information about the survey respondents.

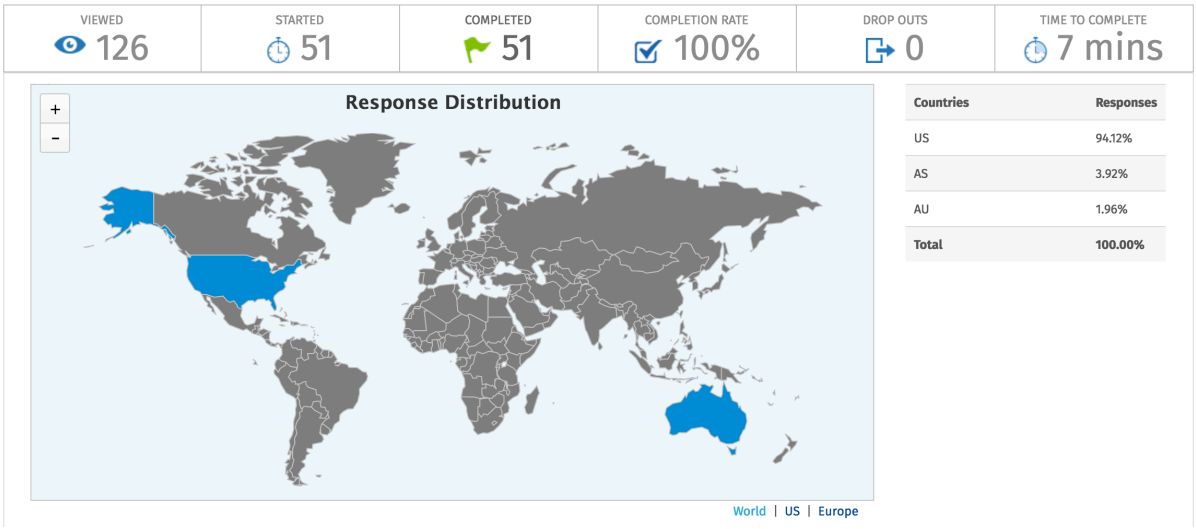


Figure 18. Geographic representation of distribution of survey respondents.

Respondents were asked to complete the 23 item online questionnaire immediately after the TCC presentations that were included in the study. Due to circumstances beyond the researcher's control, however, the survey contained missing data. Approximately 1% of the responses (12 out of 969 values) in this survey were left unanswered because, for some reason unknown to the researcher, some participants chose not to answer certain questions. To resolve this issue regarding the missing data, the researcher employed Mertler and Vannatta's (2005) technique of calculating the mean of the available data. The most common method utilized by researchers when faced with the issue of missing data is a "method of estimating missing values or data involves the calculation of the means, using available data for values with missing values, and those means are then used to replace the missing values prior to the main analysis" (Mertler & Vannatta, 2005, p. 26). The researcher replaced the missing values with the series mean in SPSS.

Table 24 depicts respondents' characteristics. Forty-two (82%) of the respondents were female and nine were male (18%), while the majority represented first time TCC Conference

attendees. More than half of the respondents (55%) were between the ages of 35 and 54 while another 47% were between the ages of 55 and 74. Of the 51 respondents, 65% reported their profession as Professor or Academic while only 2% reported being a K-12 Instructor.

Table 24

Demographic characteristics of the TCC session attendees

Characteristic	Female	Male	Total	Percent
Age				
18-24	0	0	0	0%
25-34	1	0	1	2%
35-44	17	1	18	35%
45-54	7	3	10	20%
55-64	10	4	14	27%
65-74	7	1	8	16%
75 +	0	0	0	0%
Profession				
Administrator	1	2	3	6%
Counselor	0	0	0	0%
Consultant	2	0	2	4%
Executive	0	0	0	0%
K-12 Instructor	1	0	1	2%
Professor/Academic	29	4	33	65%
Staff	4	0	4	8%
University Student	4	1	5	10%
Other	1	2	3	6%
No. of TCC Conferences Attended				
This is my first TCC Conference	22	2	24	47%
2 to 3	4	2	6	12%
4 to 5	4	4	8	16%
6 to 8	6	0	6	12%
More than 8	6	1	7	14%

Table 25 represents the frequencies for each item in the questionnaire and a combined total percentage of Strongly Agree and Agree for each of the items. Open Communication had

the highest frequency of participant agreement followed by Presenter Involvement, Perceived Learning, Affective Expression and lastly Group Cohesion. The lower frequency in the Group Cohesion category was the result of a lower perception by respondents that *Chat discussions tend to be more impersonal than face-to-face conference discussions*. The researcher provides an in-depth discussion of each of these constructs as follows.

Table 25

Frequencies with Social Presence Survey items and combined Strongly Agree (SA) and Agree (A)

Item	Construct	SA+A	UN	D/SD	%SA+A
Affective Expression					
5	Online conference sessions are an excellent medium for social interaction.	43	6	2	84%
10	I was able to form distinct individual impressions of some attendees in this session.	36	7	8	71%
11	Getting to know attendees gave me a sense of belonging in the session.	36	11	4	71%
Open Communication					
6	I felt comfortable conversing through this online medium.	48	3	0	94%
7	I felt comfortable participating in the discussions through this online medium.	49	2	0	96%
8	I felt comfortable interacting with attendees in this session.	49	1	1	96%
Group Cohesion					
9	I felt that attendees in the session acknowledged my point of view.	40	1	10	78%
12	Chat discussions helped me to develop a sense of community.	44	4	3	86%
13	Chat discussions tend to be more impersonal than face-to-face conference discussions.	21	6	24	41%
Perceived Learning					
14	I am stimulated to do additional reading or research on topics discussed in this online session.	42	7	2	82%
15	I experienced new learning or have new questions as a result of participating in this online session.	45	4	2	88%
Presenter Involvement					
16	The presenter(s) created a feeling of online community.	46	3	2	90%
17	The presenter(s) facilitated discussions in the session.	46	3	2	90%

Item	Construct	SA+A	UN	D/SD		%SA+A
18	I was able to form distinct individual impressions of the presenter(s) in this session.	47	3	1		92%
19	I felt comfortable conversing with the presenter(s) through this online medium.	46	5	0		90%

Note. Scale: SA=Strongly Agree, A=Agree, U=Uncertain, D=Disagree, SD=Strongly Disagree

Affective Expression

For the three items (Item 5, 10, 11) in the Affective Expression category, 70 – 84% of the respondents reported strongly agree or agree with the items. A low 4% (2) of the respondents strongly disagreed or disagreed while 84% of the respondents strongly agreed or agreed with the statement *Online conference sessions are an excellent medium for social interaction*. Almost 11 – 22% of the respondents were uncertain with items in this category. Also, 71% of the respondents had positive perceptions for the statements, *I was able to form distinct individual impressions of some attendees in this session* and *Getting to know attendees gave me a sense of belonging in the session*.

Open Communication

For the Open Communication category (Items 6, 7, 8) in the questionnaire, 94 – 96% of the respondents reported agreeing or strongly agreeing with the three items. Ninety-six percent of the respondents agreed or strongly agreed with both the statements, *I felt comfortable participating in the discussions through this online medium* and with *I felt comfortable interacting with attendees in this session*. Also 94% of the respondents reported strongly agreeing or agreeing with the statement *I felt comfortable conversing through this online medium*. This finding indicates their acceptance of and willingness for open communication in the online environment.

Group Cohesion

For the last social presence category, Group Cohesion (Items 9, 12, 13), 41 – 86% of the participants responded strongly agreeing or agreeing. For the statement, *Chat discussions helped*

me to develop a sense of community, 86% of the respondents strongly agreed or agreed. Also, 78% of respondents had positive perceptions with the statement; *I felt that attendees in the session acknowledged my point of view*. Item 13, *Chat discussions tend to be more impersonal than face-to-face conference discussions* resulted in 40% agreement by respondents, the lowest rating of all the social presence indicators. Thus 47% of respondents strongly disagreed or disagreed, which indicates that respondents might actually perceive chat discussions to be more personal than face-to-face conference discussions. Seven percent of respondents were undecided in their responses for the three items in this category.

Perceived Learning

For the two items (14 and 15) in the Perceived Learning category, 82 – 88% of the respondents strongly agreed or agreed with the items. Eighty two percent of respondents strongly agreed or agreed that *I am stimulated to do additional reading or research on topics discussed in this online session* while 88% of the respondents strongly agreed or agreed with the statement, *I experienced new learning or have new questions as a result of participating in this online session*. This is a firm indication that respondents saw the session presentation and discussions as motivating them to explore more on the session topics.

Presenter Involvement

The four items (16, 17, 18, 19) in the presenter involvement construct had responses indicating between 90 – 92% strongly agree and agree. A significant number (92%) of respondents reported positively that they were able to form distinct individual impressions of the presenter(s) in their session. Three other statements each received 90% positive responses from the respondents, indicating that online conference attendees had a very positive experience with the presenters in the online sessions. Particularly, 90% positive responses for the statements, *The presenter(s) created a feeling of online community*; *the presenter(s) facilitated discussions in the*

session; and *I felt comfortable conversing with the presenter(s) through this online medium* shows that the attendees were comfortable conversing through online discussion forums.

For each of the categories of social presence, Perceived Learning and Presenter Involvement, mean responses ranged from 4.37 for Item 6 (*I felt comfortable conversing through this online medium*) and Item 7 (*I felt comfortable participating in the discussions through this online medium*) to 3.02 for Item 13 (*Chat discussions tend to be more impersonal than face-to-face conference discussions*). (See Table 26). Standard deviations were highest for Item 13 (s.d. = 1.09) (*Chat discussions tend to be more impersonal than face-to-face conference discussions*), and lowest for Item #7 (s.d. = 0.56) (*I felt comfortable conversing through this online medium*). Therefore, in response to Research Question 2, the respondents reported agreeing with perceptions of social presence in a professional online conference (mean 4.04 on a scale of 1-5 where 5 was the highest).

Table 26

Descriptive Statistics of Social Presence Indicators, Perceived Learning and Presenter Involvement.

Indicator and Item No.	*Mean**	*Median*	*SD***
Affective Expression			
5	4.12	4.0	0.77
10	3.76	4.0	1.03
11	3.86	4.0	0.87
Total	3.91	4.0	0.89
Open Communication			
6	4.37	4.0	0.60
7	4.37	4.0	0.56
8	4.27	4.0	0.60
Total	4.34	4.0	0.59

Indicator and Item No.	*Mean**	*Median*	*SD***
Group Cohesion			
9	4.12	4.0	0.79
12	4.12	4.0	0.77
13**	3.02	3.0	1.09
Total	3.75	3.67	0.88
Perceived Learning			
14	4.18	4.0	0.82
15	4.27	4.0	0.78
Total	4.23	4.0	0.80
Presenter Involvement			
16	4.29	4.0	0.76
17	4.29	4.0	0.76
18	4.24	4.0	0.65
19	4.33	4.0	0.65
Total	4.29	4.0	0.71
	4.04		0.14

N = 51.
*Likert scale used: 5=Strongly Agree, 4=Agree, 3=Uncertain, 2=Disagree, 1=Strongly Disagree
** This item in the questionnaire was reverse coded for analysis.

To check the reliability of the scores generated for items in each of the three constructs, Cronbach's alpha was calculated for each of the categories of Social Presence (Affective Expression, Open Communication, Group Cohesion) along with Perceived Learning, and perception of Presenter Involvement. Table 27 provides the reliability information for perceived Social Presence. Among the subscales Affective Expression had a reliability $\alpha = 0.849$, Open communication had a reliability $\alpha = 0.876$, Group Cohesion had a reliability $\alpha = 0.564$, Perceived Learning had a reliability of $\alpha = 0.830$, and perceived Presenter Involvement had a reliability of $\alpha = 0.807$. The result for Group Cohesion reveals that there was a lower inter-correlation between these items. A score below .70 suggests that the items within the tool may not be measuring the same underlying construct for Group Cohesion. Specifically, Question 13 if removed, would increase the reliability to $\alpha = 0.753$. However, Cronbach's alpha revealed internal consistencies equal to 0.907 for all social presence items. This is well above the recommended level of .70 for

an accepted scale (Kimberlin & Winterstein, 2008). In fact > .9 is considered excellent (George & Mallery, 2003).

Table 27

Reliability statistics Social Presence Indicators, Perceived Learning and Presenter Involvement (Cronbach's Alpha α)

	Affective Expression	Open Communication	Group Cohesion	Perceived Learning	Presenter Involvement	Overall Social Presence
Reliability	$\alpha = 0.849$	$\alpha = 0.876$	$\alpha = 0.564$	$\alpha = 0.830$	$\alpha = 0.807$	$\alpha = 0.907$

A separate set of items were included in the survey to measure satisfaction participants perceived with other attendees, the presenter, their own learning and the chat discussions using a scale of very satisfied to very dissatisfied. Descriptive statistics are reported to show the reliability of participants' responses to these four satisfaction items (Table 28).

Table 28

Frequencies with Satisfaction Survey items and combined Very Satisfied (VS) and Satisfied (S)

Survey No. and Item	VS+S	N	NS/VD	% VS+S
20. Please rate your level of satisfaction with the interaction with other attendees in this session.	42	8	1	82%
21. Please rate your level of satisfaction with participating in the chat discussions in this session.	44	6	1	86%
22. Please rate your level of satisfaction with your learning in this session.	49	2	0	96%
23. Please rate your level of satisfaction with the presenter(s) in this session.	51	0	0	100%

Note. Scale: VS=Very Satisfied, S=Satisfied, N-Neutral, NS=Not Satisfied, VD=Very Dissatisfied

Responses to items used to assess the degree to which social presence was manifested in their sessions were scored using a five point Likert-type scale (1=Very Dissatisfied to 5=Very Satisfied). The four items (20, 21, 22, 23) in the participant satisfaction category were very high with responses between 82 – 100% indicating very satisfied and satisfied. A significant number (96%) of respondents reported that they were highly satisfied with their learning in the session. Participants were very satisfied/satisfied (86%) with participating in the chat discussions, and very satisfied/satisfied (82%) with the interaction with other attendees. Particularly a 100% positive response to the statement, *Please rate your level of satisfaction with the presenter(s) in this session,* shows that the attendees have strong approval of the presenters. One respondent reported not being satisfied with their interaction with other attendees in the session(s) he/she attended as well as with his/her participation in the chat discussions in the session(s).

The mean and standard deviation were also used to provide details about the distribution of the responses collected from session attendees regarding satisfaction with various items. The descriptive statistics are presented in Table 29.

Table 29

Satisfaction Scores

Item	*Mean*	*Median*	*SD*
20	4.18	4	0.77
21	4.16	4	0.70
22	4.35	4	0.56
23	4.59	5	0.50
Total	4.32	4.25	0.63

N=51

The maximum possible score for each item was 5. Mean responses for the four items ranged from 4.16 to 4.59 with an average score greater than 4. The two highest scoring items (22 and 23) had median scores of 4 and 5. These questions concerned satisfaction with learning in the session and with the presenter. The two lowest scoring items were items 20 and 21, which came from one participant who reported not being satisfied. Item 20 asked about the participant's level of satisfaction with the interaction with other attendees in this session while Item 21 asked about the participant's level of satisfaction with participating in the chat discussions in the session. Nevertheless, the survey results overall indicated participants being satisfied in a professional online conference (mean 4.32 on a scale of 1-5 where 5 was the highest) with s.d. = 0.63.

Cronbach's alpha revealed an internal consistency equal to .80 for all satisfaction items (see Table 30). This is well above the recommended level of 0.7 for an accepted scale (Kimberlin & Winterstein, 2008). Indeed >.8 is considered good (George & Mallery, 2003).

Table 30

Cronbach's alpha for Satisfaction

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.802	0.806	4

To determine relationships among perceptions of Social Presence, Perceived Learning, Presenter Involvement, and Perceived Satisfaction, Spearman rank-order correlation was calculated. Ratings were aggregated and averaged across items to yield single scores for each variable, and correlations between variables. The variables were the overall scale scores for Social Presence, Perceived Learning, Presenter Involvement, and Perceived Satisfaction in the TCC Conference sessions. Using Davis' (as cited by Miller, 1998) guideline for describing

magnitude, the significance of all correlations was interpreted: negligible equals .00 – .09, low equals .10 – .29, moderate equals .30 – .49, substantial equals .50 – .69, very high equals .70 – .99, and perfect equals 1.0. Table 31 displays a summary of the relationships among social presence, perceived learning, presenter involvement, and perceived satisfaction in the TCC Conference sessions. Substantial to very high correlations were detected among all variables (Miller, 1998).

Table 31

Correlations Between Variables (n=51)

	Variable	Social Presence	Perceived Learning	Presenter Involvement	Perceived Satisfaction
Spearman's rho	Social Presence				
	Perceived Learning	.512**			
	Presenter Involvement	.647**	.475**		
	Perceived Satisfaction	.625**	.545**	.813**	

** Correlation is significant at the 0.01 level (2-tailed).

The analysis revealed a level of relationships among the four variables. Four correlations were in the substantial range. Social presence was correlated with perceived learning, presenter involvement, and perceived satisfaction, while perceived satisfaction and perceived learning were also correlated. As shown in Table 30, a significant positive relationship was found between the social presence and learning (r_s=.512, p<.01) showing social presence accounted for approximately 26% of the variation in perception of learning. Social presence and presenter involvement (r_s =.647, p<.01) were positively related with that relationship accounting for approximately 42% of the variation in responses. Social presence and satisfaction (r_s =.625,

p<.01) were also positively correlated and the ratings of one account for approximately 39% of the variation in the other.

These results have several implications. Attendees reporting higher perceived social presence in the session also perceived they learned more from the session than attendees with low perceived social presence. This indicates a relationship between social presence and perceived learning. Attendees reporting higher perceived social presence in the session also perceived a high level of presenter involvement in the session. This implies that attendees' perceptions of social presence were related to the perceptions of the presenters in their sessions as having a satisfactory online presence in terms of amount of interaction and/or quality of that interaction. Attendees reporting higher perceived social presence in the session also perceived a higher level of satisfaction. This indicates a relationship between social presence and satisfaction. The fourth substantial correlation was between perceived satisfaction and perceived learning (r=.545. p<.01) with variation in one accounting for nearly 30% of variation in the other. Attendees reporting higher levels of satisfaction also reported higher levels of perceived learning, indicating a relationship between the two.

Lastly, the very high strong correlation between satisfaction and presenter involvement (r_s =.813, p<.01) indicates that the two are strongly related for the attendees in the sessions. In other words, how highly an attendee rated presenter involvement could account for 66% of the variation in the rating for satisfaction. Attendees perceiving more presenter involvement were very likely to be more satisfied.

Presentation of Data and Findings for Research Question 3

Presenter Interview Reflections

Each interview was conducted using Blackboard Collaborate as all of the presenters were in different cities and states and were familiar with the use of this online meeting platform. With informed consent, the interviews were recorded and were later transcribed verbatim. The semi-structured interview format facilitated an interview climate that was open, flexible, and spontaneous—characteristics that allowed for the exploration of reflections, perceptions and feelings about instructor presence. The questions were geared toward trying to understand the presenter's personality and presentation style, the connections they made with the session attendees, and their role in guiding the attendees through the learning process of the presentation.

Four of the five presenters who conducted a 45-minute presentation and whose transcriptions were analyzed in this study, also agreed to be interviewed, along with one 20-minute session presenter. The other five interviews were with presenters whose presentations were not included in the transcription content analysis for this research, as permission was not granted to code their presentations. Nonetheless, their interviews provided much insight to the researcher's investigation of social presence from the presenter's point of view. All the presenters interviewed in this study were female professors at their respective universities. Their answers to the interview questions were reviewed for emergent themes and compared across individuals using cross-case analysis. Responses are discussed below in relation to five broad themes that emerged through the analysis process—presenter presence, interaction, monitoring and responding in the chat box, online community, and moderators.

Presenter Presence

A major theme the presenters described was the need to create a sense of themselves as a 'real' person to the attendees. Presenters described many different techniques they used to

construct their own presence. One technique that was shared by several of the presenters was of using a tone of voice that was engaging, friendly, positive and upbeat. Presenter 02 commented, "I use other ways to promote myself. I used my voice inflection, different ranges of my voice to show the participants that yes, I was there. I was present." This seemed to help the presenters to establish themselves as approachable presenters who could then engage with the attendees, which was another strategy presenters used to construct their own presence.

Presenters saw sharing information as a key communication strategy. Many presenters discussed the importance of introductions through biographies to share their background, personal information, or general thoughts on the session topic. Presenters introduced themselves before their sessions began and provided short biographies and likewise encouraged attendees to introduce themselves in the chat box upon entering the session whereupon the presenter would acknowledge them verbally.

To calm her nerves about presenting, Presenter 07 mentioned, "I'll interact with a group a little bit before the session begins." For a short period of time, Presenter 10 turned her camera on and waved to attendees entering into her session. Presenter 01, who co-taught a session with her colleagues, mentioned including photographs of themselves on an introductory slide and was intrigued by another team of presenters who used video in their session, which she felt was a much more powerful way of establishing presence. Others mentioned providing attendees with their contact information during their sessions, which they then had people contact them for copies of their PowerPoint presentations after the conference ended.

Overcoming the physical distance between presenter and attendees and having the computer as the sole mode of communication were discussed by several of the presenters. Presenter 10 was aware of the technology medium having an impact on attendees, as she noted,

"People can feel whatever the technology is that's used for communication, that it's somehow in the middle of whatever is being exchanged as communication." The physical and psychological gap between presenter and attendees was an important concept addressed by Presenter 09 who shared the following:

> I think about how do we make someone, who's not in the same physical area of us, feel like we are near them, listening to them, talking to them, interacting with them, and maybe not as if we were specifically there, but maybe as if we were present in terms of sharing some imagination space, thought process, collaborative space.

Effective use of verbal and nonverbal behaviors to bridge the physical and psychological distance between people is the concept of immediacy that has been studied by many scholars. "Immediacy is a perception of physical or psychological closeness" (Richmond, 2002, p. 65). It is a concept originated by Mehrabian (1968) who initially focused on nonverbal communication. In fact, Presenter 09 was unable to present in the virtual Blackboard Collaborate room, and had to dial into her session, thus creating one more degree of separation from the participants. She lamented, "So I was two degrees not present" and felt psychologically distant from the attendees in her session.

Being aware of what was going on in the online session, aware of the interaction or lack thereof with the attendees seemed to be imperative given the unique role the presenters saw themselves as 'leader', 'facilitator', 'guide', 'content creator', and 'community builder' in the online environment. This is identical to the role of social supporters that instructors see themselves performing to promote interactions among students, help foster a sense of community, and establish an amicable learning environment in an online course (Hung & Chou, 2015).

Presenter 07 saw herself as a performer who tried to evoke positive emotion through her 20-minute presentation. She described instructor presence as, "It's basically part of a multifaceted performance, and the instructor has to attend to multiple realities at the same time and be aware of many different audience considerations." Without constant feedback from the audience to gauge how she was doing, one presenter stated how she was hypothesizing how she was coming across to her audience. Therefore, to sustain presence, she had to be cognizant of the technology, the content delivery, the timing, and the moderator and being in the role of orchestrator of all these realities. She emphasized being mindful of not wanting to waste the audience's time, and therefore "maintaining a brisk pace of speech so that they're [the audience] not laboriously listening for every word to come out next."

Interestingly, Presenter 01 remarked that she had not considered her own presence or trying to form an online community as she was focused on presenting for professional development credit with her university. It was not until the interview that she realized "that instructors do want to establish an online presence. We want the audience not necessarily identify with us, but be receptive to us and listen to what we have to say."

Interaction

Another theme that emerged from comparative analysis of the presenter interviews was how the presenters designed their presentations to engage the attendees. For some scholars of online courses, the most important role of the instructor is to ensure a high degree of interactivity and participation (Ekmekci, 2013; Mandermach et al., 2006). Many presenters in the TCC Conference encouraged questions throughout the session and intentionally designed their presentation to allow for this kind of interaction, a practice not usually fostered in face-to-face conferences where questions are normally left to the end of the presentation. As Presenter 08 explained:

> And we also spread our presentation with opportunities for questions. And we tried to engage specifically with what some of the participants said…So we kind of circled back to some of the comments that were made. And even in this short presentation, it was only 20 minutes, we tried to have a bit of participation and connect to people by name, and personalizing a little bit that way.

Referencing comments made by attendees was a strategy mentioned by a few presenters as a way of personalizing the session. A presenter who used this method actually put herself in the role of an attendee and thought how she would feel more connected and a part of the learning community if she heard her name called out or was recognized by a presenter, and therefore she attempted to do this as much as possible in her session.

Only a few presenters mentioned utilizing the interactive tools available in the Blackboard Collaborate platform to engage with their audience. This was somewhat surprising to the researcher, being that the TCC Conference is about engaging in discussions about innovations and practices related to the use of technology for teaching and learning. Perhaps presenters were unaware of the communication tools provided in Blackboard Collaborate. Perhaps more of the presenters interviewed did use active learning techniques to make their presentations more interactive but did not make the connection that this included using polling, hand raising, and the virtual whiteboard. Presenter 10 stated that integrating online components is a good practice and used "polling of ABCD…hand raising or asking questions in the chat window" as her methods to engage with the attendees in her session. Likewise Presenter 03 stated,

> I did use the polling feature to ask people at the beginning their basic knowledge of the cognitive mindset just to see where everyone was at which would help direct how I

steered the session. Then I asked people later on to answer a few questions. So I tried to make it as engaging and interactive as possible given the time constraints.

The statement above is an example of an instructor immediately assessing how well her audience understood a concept and adjusted according to the responses right on the spot. Anderson and Anderson, (2009) state how easy it is in a Web conference to present simple polls to generate a level of audience participation that is usually not available in a face-to-face conference. In fact, Presenter 07 regretted not using the polling feature. "I actually would have benefited from using a poll to establish more of that [connection with her audience]." However, she felt that in having only 20 minutes to present, her audience was expecting more content than interaction. This was a similar sentiment held by Presenter 03 who felt that delivering her content and substantially interacting with the attendees in her session was a challenge given only 20 minutes.

Varying the presentation content was also another strategy a presenter mentioned using. Presenter 07 explained, "I don't want to just use statistics all the time, or stories all the time. I'll try to provide examples and some personal experience." Presenter 02 was very mindful that her session had to be interactive. "I encouraged the participants to interact with me. And yes I did have a PowerPoint, but it was more how were they doing things. Not just all about me giving to them, but us sharing together as a whole." These responses from interviewees are in line with Parker and Parker (2013) who similarly emphasized the pedagogical benefits of student-teacher interaction, but emphasized that while it is a key feature of online courses, it is less likely to occur without the careful orchestration by the teacher.

Presenter 08 discussed the careful design of her presentation with her colleague:

We talked by phone in advance, and after we had come up with our presentation and we

> decided about how we were going to add some engagement with the participants, about how to allocate our time, who was going to have what role. So we were pretty deliberate about that. I think since the time was so tight, we wanted to make sure that we didn't have any wiggle room of not knowing where things are, which is why we planned it pretty tightly. It was fairly deliberate.

According to Presenter 02, having some kind of interaction is an unspoken expectation in online conferences. Attendees are waiting for the presenter to initiate something that will get them interacting and presenters are expecting attendees to jump in and communicate. "As a presenter, and as a participant, you expect those things. You're waiting for that person to start off the chat and you're waiting for the presenter to kind of get you interacting with each other." Thus, the notion of the presenter as the only content expert and communicator in the online learning environment is an outdated construct that may no longer be accepted by learners.

Monitoring and Responding in the Chat Box as a Communication Strategy

Another major theme that emerged was that presenters viewed their feedback to attendees as an important communication strategy. Most presenters acknowledged being responsive to any questions or comments from attendees as they were posting them to the chat box. Since the TCC Conference is currently not set up for live video streaming of all participants in the session, attendees could use the chat box to ask a question, answer a yes or no question, introduce themselves, add a comment to the live conversation, or choose not to participate based on comfort level and interest. "Making sure I was constantly reading the chat so that I could respond as quickly as possible to any of the chat that happened there" was a comment made by Presenter 04. The reason emphasized by one presenter was to maintain the connection between the audience member and the presenter so that attendees would not experience a diminished connection from not being acknowledged. Adding hyperlinks in the chat box during a

presentation by a co-presenter to provide information during the presentation was another strategy mentioned by another presenter who had a colleague co-present. She stated how when one person was talking the other person was on “hyperlink duty”, making sure to include the links in the chat box for ease of accessibility by the attendees. Presenter 08 also had an agreement with her co-presenter about monitoring the chat box:

> One thing we deliberately tried to do was when one person was not presenting, they would manage the chat area, and also when we’re not presenting I would take notes on what people were saying.

For those presenters without co-presenters to assist them, monitoring the chat box was a balancing act between presenting on the content and engaging with the audience. For example, Presenter 06 explained monitoring and providing feedback as a form of communication:

> I work on staying aware of the chat window while presenting and trying to engage people via the chat window. It can make the presentation a bit more disrupted, but I can also decide to answer the questions when I want to during the presentation.

Similarly, Presenter 03 felt it was challenging to present on content and substantially interact with the attendees in her session. She felt like she was able to do that to some degree by encouraging people to introduce themselves in the chat box in the beginning of the session. And then as people chatted, she would acknowledge them verbally for their contributions.

However, not monitoring the chat box and ignoring participant’s questions is tantamount to overlooking raised hands in a face-to-face conference. Presenters had very strong opinions about not doing this. Ironically, Presenter 01 and her colleagues did not discuss monitoring the chat box ahead of time and had this to say:

> And now I see that we should have [monitored the chat box]. It's really hard to present

> and keep tabs on the chat at the same time…At one of the very worst conference presentations that I had ever attended, nobody paid any attention to the chat window, and it was a group of about three or four people. Nobody answered questions that we were posting, and they just dropped the ball across the board. So my point is though that when you're presenting if there's at least two people somebody needs to be paying attention to the chat and letting respondents know that we are paying attention to them.

Online Community

A fourth major theme that emerged was the concept of online community. Eight out of ten presenters interviewed in this study articulated their perception of an online community as people joining together and feeling included in a voluntary capacity while participating in a common experience or goal. The following remark by Presenter 08 captures this:

> I think an online community has something unifying about it, whether it's a similar goal or more of the organization, there's some commonality there that brings people together. I think even more so than that there's some connection between the individual participants, they have to communicate somehow, they have to have some interaction and feel like they're part of something.

Presenter 02 concluded that building community her initial responsibility and then allowing it to organically develop as a group effort if the attendees wanted it. However, it seemed presenters had mixed feelings about whether or not a community was developed in their session and in the TCC Conference. Time and whether presenters had participated in a previous years' TCC Conference or in other sessions during the week made a difference in whether they felt a community was formed. For Presenter 10, who was very familiar with the TCC experience, an online community was formed because she and others made it a point to attend each other's sessions and tweet about it on social media.

> Like I made a point of going to Cynthia's Cologne's session for a couple different reasons. One is relationship, personal professional over the years because we have an interest in the same subject, but also just because I enjoy her presentations…So I attended her session and I know I tweeted about it, but also she came to my session, we were both doing stuff on maker spaces, and then I saw that she tweeted out after that. So that wouldn't be the only situation like that. There are other people in the TCC, you know long time attendees, that will do stuff like that. Show up at each other's sessions. Because they enjoy sharing with their colleagues what they're saying, you know, they have a community relationship with them.

Gunawardena and Zittle (1999) found that social presence could "be cultured" by ensuring individuals learn online behaviors to help establish connection with others. When individuals are very familiar with being in an online community, as Presenter 02 explained, it becomes second nature. Participants know what to expect and know the rules to follow. For those unaccustomed to being in online environment and limited experience with online interactions, just navigating the online platform and behaviors can be overwhelming and intimidating. Presenter 02 also commented on the differences between in-person conference vs. online conference expectations and behaviors. She shared how overwhelming it must be for attendees who are unfamiliar with online platforms to not only have to learn the technology to enter a session and the technology to communicate in the chat box and use the various tools while listening to the presenter. Whereas in face-to-face conference, the expectation of attendees is to enter the presentation room, find a seat, listen and exit once the presentation is done.

For Presenter 03, mere attendance signifies being a part of a community. However, how much attendees gain from the experience or contribute to the experience is a personal matter. In

this presenter's experience, "with my work schedule and the things that I had to get done, I didn't attend the social hours. So I'd say that my contribution to networking and to talking with people in the community was probably not as great as other people." While for Presenter 03, exchanging pleasantries was a way she and others participated in the online community.

> Well, there were a few that we kind of said 'hi' to each other, and "oh, good to see you again", over the time…Who knows, maybe next year if we meet again in different workshops we'll connect again and be able to say "hello, it's good to see you, I know I saw you several times."

Five presenters mentioned the level of interaction in their sessions led them to believe an online community was being formed. Attendees' "give and take", "liveliness in the discussion," "like mindedness and interest in learning and figuring things out together", and seeing each other at various sessions throughout the three days were examples of community formation. Presenter 04 recalled experiencing a professional reunion at the TCC Conference with someone she had previously worked with. She explained her perspective on this:

> But I will tell you something, one of the presenters is someone who used to be at the college with me, and he did contact me to say hello because I went to his session and to say thanks for dropping into the session. And I contacted him back and told him I let some people here know that he was doing a presentation and so it's interesting, there was that contact for me.

Several presenters also mentioned communication with attendees after the TCC Conference. They had attendees correspond with them because of their interest in learning more about the presenters' presentations. However, the notion of time was again stated as a factor that inhibited a lasting sense of community. For some presenters, a 20-minute session or a few email

exchanges after the conference are insufficient to create an online community. Presenter 04 spoke about this, explaining it in the following way:

> Um, and this is the reason why I'm hmming and hawing about it. The reason why is because I am involved in some other online communities that are up all the time. So I guess for me I define community as something that stays up longer. I think that there was great interaction, and I mean I went to some of the 20-minute sessions. Good interaction there too. And I was surprised. I expected the 20-minute sessions to have less chat. But there were still a lot of people greeting each other, having little discussions ahead of time, and interacting with the presenters and people going back and forth. I was surprised how much there was in the 20 minute sessions. Again, I'm having that time bias.

Similarly, Presenter 06 stated that communities are engaged "for an extended period of time like a course, a group or a discussion forum." This presenter went on to describe the design of her presentation did not illicit a sense of community because it was a structured presentation developed intentionally for a 20-minute session rather than a question and answer session that would have allowed for more of a community feeling. Presenter 01 felt she and her co-presenters needed better time management in their session so they could form more of a community. She noted that her session "had a lot of comments, a lot of interaction from the attendees, which was good" but that she did not feel her team communicated well in return because they ran out of time.

The opportunity to form an online community outside the formal presentations was made available to everyone registered for the TCC Conference via several social media activities that included tweeting and visiting the Coconut Café, a virtual lounge where TCC Conference participants could hang out and meet other TCC participants. This informal Blackboard

Collaborate room is self-hosted and available 24 hours where it is encouraged to be used as a chat area. However, very few presenters acknowledged participating in events outside the formal presentations. For four of the presenters, it was difficult to get away from their work obligations and finalizing their semester courses as well as the time difference presenting a limitation to their social interactions with others in the conference. Another two presenters mentioned that socializing online did not interest them. Presenter 07 explained her rationale for this standpoint:

> I didn't feel that it was a priority for me to be a social persona in this particular community. This is not my primary professional community. If I was with a group of speech language pathologists, I would have more in common with the individual to like being in a happy hour kind of thing. But, I've never had any prior contact with most of the people. So, the expectation that I would be engaged in post-conference contact was of a lesser degree, for this particular conference.

For Presenter 01, participating in social media is simply not a part of her routine. She admitted to not having a twitter account, a Facebook account or a smartphone, relying on her 10-year-old flip phone to keep her connected. "I'm pretty much a dinosaur about some of this stuff."

Interestingly, three of the presenters did socialize to some extent with others in the TCC Conference via Twitter, Instagram or on LinkedIn. Presenter 04 explained,

> I did some social tweeting like, "oh, I'm going to this session." I had two favorite sessions. I tweeted out on them to give some information. And because I couldn't just do the conference, because I was also doing my work, the other thing that I went ahead and did, is that I kept up the twitter feed for the hash tag the whole time during the day. So while I was working on other things I kept that up…And it did make me feel connected.

Moderators

One theme, emerging unexpectedly, was how valuable the presence of a moderator in their sessions was for a few of the presenters. Presenters admitted relying on their moderator for assistance. In their study of online conferences, Anderson and Anderson (2009) found that online conference organizers felt that having an experienced moderator present during the actual presentation for things like technical assistance and monitoring the text chat was important. In fact, Presenter 10 stated:

> But that's really what the beauty of a facilitator is, or a moderator/facilitator working with the presenter. Because they can be asked to point out that so-and-so has a question, while you're presenting. So that it's not as taxing for the presenter, and yet the presenter is able to be very responsive to the participants.

In fact, for Presenter 09 who experienced technology issues during her session, having a moderator was invaluable.

> So I mean it definitely was helpful to have someone who was actually in the room that I could speak to and guide, and who could tell me and give me different feedback that yes, you're on the right slide, or we're seeing the correct information and there are comments coming in, people are liking this. Just giving me the affirmation that I was connecting with people.

The moderator became essentially the conduit between the virtual world and the presentation.

Attendee Interview Reflections

This section addresses the interview reflections from nine attendees (seven women and two men) who were interviewed online about their experience in at least one of the six sessions that was included in this study. Responses are discussed below in relation to six broad themes

that emerged during the interviews with the nine participants—their own social presence, other attendee social presence, presenter presence, monitoring and responding in the chat box, audio vs. text communication, and community.

Own social presence

Attendees were conscious about how the content of their chat posts would reflect on their own presence, on their interests, and on their professionalism with several stating how carefully they thought about their posts and corrected their posts before hitting the send key. Attendee 04 explained, "I was cognitive of wanting to present clear concise information and do it conversationally." "Obviously I think that I'm like anyone else in the sense that I make sure that I tailor my response appropriately" was how Attendee 05 described his experience in posting to the chat box. Attendee 06 shared "I write a message and before I post it I review it. I'm aware that after you click and post it, you can't undo it." The following remark by Attendee 04 captures this sensitivity to manifesting their social presence carefully through their chat messages:

> I didn't want to appear elitist. I didn't want to appear to be a know it all. I like to have challenging discussions in the chat. I certainly wouldn't want to be perceived as squashing somebody else's idea. I think all ideas are up for discussion.

Personal information about attendees was mentioned by a few as something that was shared when appropriate. Oftentimes, presenters or moderators of the sessions would ask attendees to post where they were logging in from as an icebreaker. Unfortunately, this indicator of Community Cohesion was not captured in the cases examined in this study due to the start of the recording occurring when the presenters formally began their presentations and not prior to that when attendees and presenters were informally communicating with each other.

Interestingly Attendee 02 commented that he did not personalize his input because he does not think online presentations are a personal experience and in fact finds them to be a

"depersonalized means of interaction." This stance was the exception rather than the norm.

On the opposite end of the spectrum, Attendee 09 saw herself as a welcoming and supportive learner who said hello to everyone as soon as she entered into a session and found enjoyment in "the awareness of others, and the delight in seeing their presence and sharing with them."

Paralanguage, or the use of emojis, exclamation points, or capitalization of words to substitute for the missing cues used to evoke presence was not commonly used by those interviewed in this study. Attendee 07 stated,

> I don't tend to gravitate towards those types of things. I think it is just not me. I'm not typically the type of person who would use like, emojis or exclamations or anything like that.

Attendee 08, on the other hand, was more comfortable using emoticons as she felt it was a safer way of expressing herself than actually writing messages in the chat box. She admitted to being new to the field of educational technology and therefor uncomfortable in posting her own opinions during the sessions.

Attendee 09 was mentioned by a few other attendees as being memorable for the way she used an "old-fashioned form of emoting." Because of her personal style, she was recognized throughout the TCC Conference immediately upon entering a session and her method of engaging with other attendees in the chat box. Attendee 05 explained, "I would see her in other presentations, and she was always very encouraging to the presenters and to the audience, and you knew she was there because she would use these things [emoticons]."

One attendee who did not opt for smiley faces or exclamation marks conveyed her emotions via the chat messages, using such phrases as "I feel that" to indicate ownership over the emotion.

The majority of attendees considered other attendees and the presenters, mentioning writing designed not to offend or detract from the presentation. A few attendees were not as restrained in posting to the chat box, however, mentioning that time is of the essence in online presentations so posting right away to get their message across was more important than censoring their posts. One attendee commented on how posting was her way of letting the presenter know that "everything's going good." Attendee 06 shared,

> When you are face-to-face making a presentation you can see the faces of the people…and their gestures. And that's your feedback. But here, the feedback for the presenter is the chat room, so I like to contribute in that way. To let him or her know that we are appreciating what is presented.

These comments indicate that as we all have our own personal style of speaking, we also have or own way of chatting and posting messages online. What was also noteworthy was the attendees who mentioned being more observant and quiet during the online sessions.

Attendee 05 described himself as someone who would sit and listen and not post often unless he had reason to. "I tend to be one of those, what's the word, lurkers?"

Similarly, Attendee 04 mentioned not having a great presence and being more of an observer than a participant. She added, "I don't remember what I may have added to that conversation but I know that I was reading and listening very intently."

Perception of other attendees

Attendees' perception of other attendees varied from being inspired, being turned off, and not having any impressions. The feedback provided mentioned the professionalism some

attendees demonstrated in the thoughtful responses to the chat posts and the expectation that since this is a conference, and not Facebook or texting, that a sense of formality should extend to the chat conversations, including "good writing and good syntax." In fact, several attendees seemed biased against some of the more personal messaging styles others used in the session. Others mentioned actively looking to chat messages that shared a different viewpoint, thus creating inspiration and a more stimulating experience in the online experience. The following remark from Attendee 07 captures this:

> I'm looking to see if there's someone who has something in particular that's different, far different than what I'm thinking. Because then those ones, you know, when we all kind of agree and type 'I agree', or we think 'that's great', I'm looking for the ones who maybe present an avenue or point of view that we didn't think about before.

Attendees 03 and 06 looked for content that was interesting and relevant to them or to what the presentation was about. Attendee 03 also tried to uncover who was behind the post, observe for their emoticons, and recall what she knew about them and if they had introduced themselves at the beginning of the presentation. Attendee 03 appeared to be looking for that other person she could connect with during her online experience.

Backgrounds, especially other attendees' academic or professional credentials, are usually not known unless attendees are already acquainted with each other or have disclosed this information during the session. The majority of TCC Conference attendees this year were academic professionals with doctoral degrees and yet few included their titles, generally keeping to their first and last names upon entering a session.

Attendee 04 and Attendee 09 acknowledged never using their professional titles at the TCC Conference in order to avoid making others feel uncomfortable or that their level of

knowledge was superior. Attendee 09 felt that it was a way of distancing rather than unifying attendees at a conference.

For Attendee 01, referring to one's professional credentials (a subcode in the Knowledge & Experience category of the Social Presence Model) was considered an affectation. She commented,

> So generally what I've noticed for those people, is that they'll preface that with something like, 'Oh well, I'm a professor at such and such University and this is what I think'. Because they're from a prestigious place, they assume their comment carries more weight.

It seemed attendees spent time trying to interpret other attendees through their messages. They would look for emoticons or other paralanguage that would indicate body language or emotions that would allow them to construct their own responses. Attendees also described reading intently to understand what other attendees were saying and the types of experiences they were sharing in the context of the presentation.

Audio vs. text communication

The majority of attendees did not perceive the absence of vocal and verbal cues in the chat box to be an issue in creating their presence or perceiving others' presence, explaining their familiarity with communicating electronically in writing.

Attendee 02 expressed that most people are text-based communicators in a lot of contexts. He added, "I think those of us who are using web conferencing just extrapolate from that…we have a sense of how to convey ourselves with emoticons or carefully chosen verbiage."

Similarly, Attendee 04 described her numerous years of being involved online providing her with the knowledge and experience to feel "very comfortable to be in the chat and make my

ideas clear and to understand what other people actually might mean when maybe their tone is a little bit off."

Attendee 08 felt like she was starting to get impressions of other attendees by their posts and by the end of the TCC Conference "seeing personalities coming out." She started to "know certain people by the questions they asked."

Likewise, Attendee 05 superimposed what attendees looked like by the way they posted messages. He shared, "It is kind of more difficult to form an impression and to sort of have that presence impression of them [other attendees]..I think the mind sort of improvises."

Additionally, some attendees mentioned that the opportunity to take the microphone did occur during the sessions but they preferred not to, either because they "like to talk" and did not want to take away the focus from the presenter or because they felt writing was an easier way for them to express their thoughts. As Attendee 06 described it, "I think that since writing comes up more quickly, I think I'm more succinct in writing than I am in talking. I think we can say much more by writing in the chat room."

Perception of presenters

Attendees described the presenter(s) as being 'poised and talented', 'amazing', 'very professional', 'creative', 'not what I expected', 'dynamic', 'very knowledgeable', 'breadth of experience', 'very cool', 'technology savvy'. It is difficult to know if the majority of attendees who were interviewed for this study unconsciously focused on presentations that resonated with them and made them feel positive or chose not to say anything negative about a presenter in order to provide the researcher the answer he or she thought the researcher wanted to hear. Regardless, attendees were most impressed with how presenters delivered their content; from the creative titles presenters gave their sessions to the strategies they used to teach the session to their tone of voice in delivering the presentation.

Attendees described presenters who trigged strong emotions because of their talks, inspired awe in how technologically savvy they were, engaged the audience by telling jokes, stories, and anecdotes, and compared them to athletes who were able "pull some surprising moves and making it all blend together beautifully." A sense of gratitude was extended by attendees for those presenters, as can be read in this Attendee's 06 response:

> Actually if you see that session that I was talking about, at the very end there were a lot of people there and the session was over. And they didn't want to leave. And everyone was saying 'thank you, thank you, thank you' many times at the end because it developed as a very engaging experience.

Having cutting edge research also resonated with attendees. Attendee 06 commented on her appreciation for newer information and ways of dealing with things that were happening in the classroom that they had not seen before.

Attendee 03 conveyed a similar appreciation, stating the session that made the most impact on her was one where the presenters had done original research. "So the quality of their work was very, very good and they had the data to back up some of the claims that they were making in their presentation."

Interestingly, for Attendee 07, it was the presenter who had technology challenges that made an impression on her. She could not recall the content of the presentation; only that it was a very long presentation with too many slides that needed to be cut short. Although Attendee 07 did not say anything negative about the presenter, the researcher got a sense that this was not on the par with the other presenters who she thought were "very professional and had really good information to cover."

A few presenters seemed especially agile in doing multiple things well, including being able to present their content, interact with their audience and work with the technology tools. Attendee 09 lauded a presenter for "being able to work the chats, work the links, work multiple sources at the same time." Attendee 08 commented on a presenter who "… was like doing three things at once" including responding to attendee questions, putting links in the chat box and presenting all at the same time. In fact, this presenter left a definite impression on Attendee 08:

> She was super generous in sharing. She provided links to all the stuff that she was going over, and then she had one link and a live binder, which I don't know what a live binder is, but had all the tools, like probably over 100, that she had used or investigated.

How presenters interacted with attendees during their presentations was another way their presence was perceived. Attendee 06 described a session where a team of presenters encouraged attendees to post questions in the chat box and engaged attendees by asked them to provide examples of their experience or just answer 'yes' or 'no' to the presenter's questions. "And just that, simple questions kept the audience really connected."

In contrast Attendee 04 described a team of presenters who weren't inviting, had a stagnant presentation and were not willing to engage with their audience resulting in her being less inclined to participate. "They were there to just give their presentation and weren't necessarily paying attention to what was happening in the chat." Another attendee had a similar experience, describing presenters who "were talking and talking and talking but they weren't making like a dialogue with the participants. And you could actually see people leaving the room."

Monitoring and Responding in the Chat Box as a Communication Strategy

Attendees noticed if presenters participated or not in the chat discussions, by either posting in the chat box themselves or addressing posts that attendees had written. According to

attendees, some presenters participated and some did not, depending on the nature of the presentation or whether they were co-presenting and had one presenter engaging discussions in the chat box while the other presenter managed the slide presentation.

Several attendees commented on the sessions with two or more presenters coordinating the session, saying it was very useful to have this occur. While one presenter was talking the other was paying attention to the chat box so that when questions came up that presenter could be answering the questions in the chat, or interacting with the attendees.

Attendee 05 felt that presenting in pairs was an advantage and recalled a session where the presenters took turns "while one of them was presenting the other one would kind of engage people in the chat box and answer questions."

Attendee 06 felt that the interaction "was kept alive, in a way, in the chat room by the second or third presenter while the main presenter kept focus on the presentation."

Interestingly, Attendee 09 mentioned that posting to the chat during a presentation is a cultural phenomenon with the presenter setting the tone by doing it themselves and actively instigating attendees' chat discussions to encourage this kind of interaction. This is similar to the point made by one of the presenters and that Gunawardena and Zittle (1999) found that could "be cultured" meaning that individuals could learn online behaviors to help establish connection with others. According to the attendee:

> People don't quite know what the norm is yet. And over 75% of the people in every room or maybe more were new. They had never been to a TCC Conference before. And many places you go it's considered rude to speak in the chat. Once a speaker is speaking, you shouldn't type at the same time. So culturally this new crowd that comes in isn't really

> part of the ‘ohana [family] in the sense that they’re into this open and warmly embracing participation.

Attendees were divided on whether it was better for presenters to respond to questions or comment on attendee posts by posting to the chat box themselves versus acknowledging the questions and responding to comments aloud during the session. What attendees seemed to convey in their responses, is that regardless of what method was chosen, it was important for the presenter to be paying attention and responding to attendees’ questions. Although Dennen, Darabi, and Smith (2007) and Richardson et al., (2015a) do not specifically address professional online conferences, their research is useful regarding the importance of feedback being even more important in online classes than in in-person classes because of the potential geographical disconnect.

Online Community

The majority of attendees perceived an online community to be comprised of a diverse group of people who respectfully and professionally interact online around a common goal or common interests “so that all members are heard, all opinions are valued, and that it's okay to disagree and to dissent with a level of camaraderie.” Only one of the nine attendees interviewed included the idea of time in their definition of an online community. Attendee 02 expressed that,

> I would be more inclined to apply it to something that's ongoing as an online community, like a Facebook group, or class session that's going to occur over a meaningful period of time where people would have an opportunity to get to know each other and their relative strengths, interests, and areas of expertise.

Attendees were split; with some definitely perceiving that an online community developed in the session they attended while others hesitated and were not as readily convinced.

According to Attendee 01 who participated in a presentation that seemed to have made a

significant impact on her, community was created because of the degree of personal sharing that occurred. She felt that by everyone sharing a personal story, it opened up the opportunity for a sense of community to be built much more quickly than others experienced over the three days of the conference. “We established a sense of community as a bunch of peers, a bunch of educators. But when you take it to that next step, that personal level, then that really helps to bond people together in the audience.”

Community depended on interaction, according to Attendee 03 who noticed a lot of participants coming and going from the sessions. She noticed a lot of names in the Blackboard Collaborate participant window but not many of those names in the chat box interacting in the session. “But the people who were joining in the conversation and being active and present the whole time, I did feel I got to know them and to learn more about their ideas.”

Most attendees agreed that an online community was formed at the TCC Conference with exceptions. According to Attendee 06, the TCC Conference is a community because of the shared interest in the topic that connects everyone, albeit only for three days.

This opinion was shared by Attendee 09 and Attendee 02, who believed community was formed for the recurring participants to the TCC Conference. Attendee 02 shared, “I think there is a community around TCC, but the community is the folks who are regular participants or who collaborate in creating and hosting TCC.”

According to Attendee 01, community was formed for those who had dual roles as both moderators and attendees because they experienced the additional benefit of having personal interaction with more people.

> So when I would see them later, well see them virtually, in another session, then it was like, ‘oh hi there’s my friend’. As opposed to a participant who was only popping in to

this session or that session, I don't quite feel like they were able to establish that sense of overall community.

Community was formed overall around the TCC Conference for those who actively participated in social media and extended their connections beyond of the TCC Conference, according to Attendee 03.

I think part of what really helps with that [online community formation] is being able to connect outside of the TCC website on social media. Like I found a lot of the twitter conversations about the conference, and was able to also connect with some people on LinkedIn.

In fact, Attendee 09 was surprised, albeit pleased, to have friend requests on LinkedIn after a few of the sessions she attended. She also appreciated having new followers on twitter.

Attendees used the TCC hashtag, @tcchawaii, to tweet about sessions that were presented by their colleagues or to share information that was gleaned in various sessions with others who had not attended the TCC Conference.

Interestingly, Attendee 05 made sketches of what he was experiencing and learning during the sessions and sharing a photo of each sketch on Twitter. According to this attendee, sketching engaged different parts of his brain, which he felt helped him to internalize all of the ideas better.

Similar to the presenters who were interviewed, most of the attendees did not interact in the Coconut Café, a virtual lounge where TCC Conference participants could hang out, take a break, meet their peers, conference staff, and presenters. Some mentioned stepping into the virtual room but not "seeing" anyone else present. Just as the presenters' expressed in their interview, the reason for most attendees not connecting with others in the Coconut Café was not

having enough time and having too many other obligations to attend to that coincided with the TCC Conference.

Chapter Summary

Chapter 4 discussed the results of six different data analysis approaches utilized, including word count and linguistic inquiry, transcript content analysis, constant comparison analysis, survey and interviews to explore how social presence manifests in a professional online conference. Results illustrate that participants' manifested social presence behaviors across all presentations. Interaction Intensity was manifested and perceived to be the mot important category for both attendees and presenters followed by Affective Association and Community Cohesion. Knowledge & Experience and Presenter Involvement, although present, were not dominant behaviors in online conference sessions. Chapter 5 will discuss the conclusions and implications of the study.

CHAPTER 5. DISCUSSION

The researcher embarked on examining how social presence manifests in a professional online conference. In Chapter 1, an argument was made for why research needs to be conducted on social presence in regards to professional online conferences. Then in Chapter 2, the researcher reviewed the literature on conferences, the community of inquiry (CoI), social presence, and computer mediated communication. After reviewing the literature, the researcher explained in Chapter 3 the methods that were used for this study and the results were reported in Chapter 4. Chapter 5 will discuss the significance of these results, the limitations of this study, and the practical implications for the results— specifically for conference organizers, presenters, and attendees.

Conclusions

Conclusions for Research Question 1: How is social presence manifested in the volume and patterns of interaction in a professional online conference?

Social presence was found manifested in the volume and patterns of interaction in a professional online conference and can be studied using the CoI framework; specifically, the social presence category. This was evident in the data gathered using multiple methods to observe and analyze what occurred during the 2016 TCC Conference as well as perceived experiences by participants in interviews after the conference. Attendees projected themselves socially and emotionally as well as formed perceptions of other attendees and presenters as 'real people.' For attendees, this was demonstrated by the way messages were posted in the chat box and how others interpreted those messages as well as how attendees interacted with each other and with the presenter using chat discussions. For the presenters, this was demonstrated by how they presented their content, how they interacted with attendees, what they did (or did not do)

and what they said to engage attendees in the sessions within the time, context and tools limited to the computer mediated environment.

Interaction Intensity

Interaction Intensity was by far the most manifested category (48%) of the five examined in the cases. Chat messages from attendees in the sessions helped build relationships, established contacts, and indicated acceptance. Attendees' engagement in discussions was by no means characterized by one-way monologues. Open communication occurred between the attendees in the sessions. Posting replies to others' messages during the online presentations and referring specifically to the content of another message were examples of interactive responses that reinforced or encouraged others. Therefore, interactive or communicative reinforcement was the key to sustaining interpersonal interactions.

Reinforcement behaviors were communicated through the use of compliments, acknowledgments, and expressions of appreciation (Rourke et al., 2001). It would have been much quicker for attendees to use paralanguage (an Affective Association indicator) to interact with others than to read, process, and then respond to another's post. However, analysis showed that conversations were personalized and demonstrated that attendees were mutually aware of each other by attendees quoting and/or referring to another's post or by using the attendee's name in their replies.

The chat posts as well as responses by attendees to the questionnaire and the interviews supported the importance participants placed on interaction. In fact, Open Communication (as the Interaction Intensity category was called in the survey) had the highest frequency of participant agreement in the online questionnaire, with responses indicating that both presenters and attendees felt comfortable conversing, participating and interacting with the others using the online medium. This is an increase from nineteen years ago when Gunawardena and Zittle

(1997) conducted a survey that measured social presence as a predictor of students' satisfaction in a computer-mediated conferencing environment. Of the three surveys adapted for the present study, their survey was the only one with a mean and standard deviation to compare with the results discussed here. Table 32 compares the results from three similar items in the survey conducted by Gunawardena and Zittle (1997) with the survey conducted here. Mean perception of feeling comfortable conversing, participating and interacting with others in the conference was higher in the current study than in the original study. This difference is most likely a reflection of the changing attitudes over time about computer mediated environments as technology has become integrated in every day learning and communication and people's comfort level has increased.

Table 32

Comparison of three Social Presence Indicators between Gunawardena and Zittle (1997) and Current Study

Social Presence Indicators	Gunawardena and Zittle (1997)	*Mean*	*SD*	Current Study	*Mean*	*SD*
Open Communication	I felt comfortable conversing through this text-based medium.	3.92	1.13	I felt comfortable conversing through this online medium.	4.37	0.60
Open Communication	I felt comfortable participating in GlobalEd discussions.	3.65	0.97	I felt comfortable participating in the discussions through this online medium.	4.37	0.56
Open Communication	I felt comfortable interacting with other participants in the conference.	3.79	0.98	I felt comfortable interacting with other attendees in this session.	4.27	0.60

For the presenters in five of the six sessions, Interaction Intensity was manifested the most. The majority of the presenters demonstrated behaviors that were coded as showing acknowledgement, appreciation, complementing, inquiring, and providing feedback and answers. On average, compliments or agreement were manifested 31% of the time by all presenters followed closely by acknowledgement (27%) and appreciation (20%). (See Table 33.)

Table 33

Indicators in the Interaction Intensity Category Most Manifested Across the Six Sessions

Category & Indicator	Case A		Case B		Case C		Case D		Case E		Case F		Total	%
Interaction Intensity	10	100%	68	100%	45	100%	50	100%	66	100%	31	100%	270	100%
Acknowledgement	0	0%	29	43%	9	20%	7	14%	15	23%	14	45%	74	27%
Appreciation	6	60%	3	4%	17	38%	14	28%	9	14%	5	16%	54	20%
Compliments/Agreement	3	30%	14	21%	14	31%	17	34%	31	47%	5	16%	84	31%
Inquiry	1	10%	16	24%	3	7%	4	8%	8	12%	2	6%	34	13%
Feedback/Answer	0	0%	6	9%	2	4%	8	16%	3	5%	5	16%	24	9%
Disagreement	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%

Presenters appeared to be more focused on delivering the content of their presentations and may only have had enough time to provide social interaction within the chat box rather than more detailed responses, instructions, and session contributions that are normally found in online courses and coded as Presenter Involvement. Unlike semester long online courses that are designed with class assignments and tasks for students to complete individually or in teams with instructors providing detailed instructions and evaluation post submission, presentations at the TCC Conference are short methods of delivering content designed to give attendees a quick sense of what is going on in the field. The 45 and 20-minute presentations provided just enough time for the speakers to give some context about their research area, and/or to also present a couple of new developments. Therefore, as attendees responded to the presenter's presentation

by posting in the chat box, presenters reinforced these behaviors by providing attendees with compliments, acknowledgement and appreciation for their contribution to the chat discussion. This strategy showed the attendee that his or her post was important to the presenter. Thus Whiteside's (2015) Presenter Involvement indicators of (a) responding to attendees, (b) providing instruction, (c) contributing to the session, (d) digressing with personal experiences, and (e) redirecting were not useful as a separate social presence classification in this professional online conference. Either the indicators were not relevant or were easily coded using the original social presence indicators developed by Rourke et al., (1999a).

Affective Association

The majority of attendees did not use verbal behaviors to compensate for the lack of non-verbal and vocal cues available to them while communicating online. Displaying emotional closeness, warmth, and openness known as Affective Association was only manifested 17% of the time by the participants in this sample. Affective communication is particularly important in the initial stages of an online course to build trust (Beach, Coates, Hinton, & Montoya, 2013) and project personal presence into online discussions through language (Swan, 2002b). Of the affective indicators most frequently used, attendees demonstrated a preference for paralanguage over all the other indicators within the Affective Association category. As attendees tried to mimic physical communication patterns, they used emoticons (e.g. ☺, ☹), repeated punctuation (!!!), and eye-catching capitalization (THAT'S COOL) to communicate tone of voice and express emotion. Although not as common as paralanguage, the use of humor as a potential approach to reduce social distance and convey good will was also expressed. Disclosure of personal information to others in the sessions, on the other hand, was rarely manifested. Previous research has indicated that the more students know about each other, the more likely they are to establish trust, seek support, and find satisfaction (Haythornthwaite & Kazmer, 2004; Rovai,

2002; Rovai & Jordan, 2004). The lack of exchange of personal information among attendees coincides with the results from the linguistic inquiry and word count (LIWC), which demonstrated a low authenticity level. The LIWC results showed participants did not feel they could be personal, humble, or vulnerable during the conference. Perhaps this was due to the majority of the participants being new to the TCC Conference showing these social presence indictors still need to "be cultured," meaning individuals need to learn these online behaviors.

Survey analysis of the data reveals that items measuring the Affective Expression category (as it was called in the questionnaire) had a somewhat high level of agreement as perceived by the respondents. Results indicated that participants strongly agreed that online conference sessions were an excellent medium for social interaction, that they were able to form distinct individual impressions of some participants in the sessions, and that getting to know other participants gave them a sense of belonging in the session.

The fact that the neither openness nor personal information were found in the linguistic inquiry word count or in the transcript content analysis and were perceived to have been experienced by participants as indicated in the survey is perplexing. It appears that without personal information about others in the conference, participants filled in the blanks on personalities they could neither see nor hear. Many of attendees who were interviewed appeared to have formed impressions of others by reading their postings in the chat box, through the use of their language, sensitivity to sharing information about themselves, and taking note of how engaged they were. Attendees indicated a strong curiosity about others in the online sessions and were trying to get a sense of who the other attendees were by reading to understand what other attendees were posting. Attendees responded that by the end of the TCC Conference, they were "getting impressions of other attendees" and "seeing personalities come out." An attendee

described his experience, “when I see them type, or when I even read their name ….my mind kind of tends to drift to a certain imagination of what they may look like and be like.” Could this mean that individuals try to shape the social presence of others by imagining their identity in the community?

Presenter Involvement

Presenter Involvement was the least coded (3%) of the five categories because the category was not adequate for analyzing the behaviors of the presenters in an online conference. The presenters in the sessions analyzed in this study were manifesting the behaviors of the other four categories to establish their presence. The indicators in Presenter Involvement were not pertinent to speakers at a professional online conference as they would be for instructors teaching an online course. What was manifested was Presenter Presence. This is similar to other studies examining instructor presence in online courses where the relevance of the instructor’s social dimension gives the online classroom a better sense of community and contributes to the learning environment (Mayne & Qiang Wu, 2011, (Pollard et al., 2014; Shea, Hayes, & Vickers, 2010; Swan & Shih, 2005).

Communication between two or more people, seeing or hearing the other person gives the impression that people are on the other side of the computer screen (Gunawardena & Zittle, 1997; Ruedenberg, Danet, & Rosenbaum-Tamari, 1995), thus closing the psychological distance (Wolcott, 1996) and minimizing the feeling of isolation (Mehrabian, 1968; Wiener & Mehrabian, 1968). Known as verbal immediacy behaviors within social presence, the presenters at the TCC Conference created a sense of psychological immediacy between and among the attendees and themselves and were able to manifest their presenter presence in multiple ways. Even though they were speaking in 45 and 20-minute sessions, evidence showed that presenters were able to establish their own social presence. Similar to the findings of Stone and Chapman (2006),

presenter presence appeared to be personally constructed and connected to their beliefs and teaching style.

Transcript content analysis indicated presenters used all categories of social presence to some degree and more predominantly Interaction Intensity, Affective Association, Community Cohesion and Knowledge & Experience. Presenter 05 (Case E) was distinctive in presenting a slower paced session and using moments of silence and reflection as powerful tools to help attendees make personal connections with her content. Conversely, Presenters 04 and 11 (Case B) used a fast paced presentation with humor, emotion and paralanguage to make strong affective connections with their attendees. Team C (Case C) and Presenter 03 (Case F) had the highest manifestation of building community through their use of group reference (e.g., 'we', 'us' and 'our') with attendees in their session. Constant comparison analysis of the session with the highest social presence indicators (Case B) and the session with the highest social presence density (Case C) showed levels of attendee-presenter interaction that were dominant over other types of interaction (e.g., attendee/attendee or attendee/content).

Survey respondents reported that they were able to form distinct individual impressions of the presenter(s) in their session. Presenters were perceived positively with 90% of respondents agreeing that the presenters created a feeling of online community, facilitated discussions in the session; and made it comfortable for them to converse with the presenters through this online medium. These perceptions were confirmed in the one-on-one interviews with attendees and the presenters. Based on the interview data, presenter presence was manifested through two broad constructs: (a) role; and (b) design and delivery of content.

Presenter's role

Presenters described the need to create a sense of themselves as a 'real' person to the attendees in their sessions. They did this using tone of voice to establish themselves as approachable presenters who were open to engaging with the attendees in their sessions. According to Murray (2002), language and tone is also needed to create community as these are the methods for conveying thoughts and feelings in an environment absent of visual cues. Introducing themselves in the beginning of the sessions via the chat box, turning on the video tool and waving to their audience or posting photos of themselves in their introductory slides were other behaviors the presenters exhibited to create their social presence. Presenters described themselves as facilitators, content creators and community builders who needed to build their presence and their leadership in order to guide a roomful of online attendees. This corresponds to the similar function of the online instructor embodying multiple roles that evolve in response to the instructional demands of the classroom (Heuer & King, 2004; Richardson et al., 2015). Attendees confirmed these experiences of presenters manifesting their presence. They described the presenters as being engaging with unique styles of presenting, and working together to reach out to the audience. As one attendee noted about a presenter that stood out, "her style of presenting is very dynamic and kept my interest even though I had no idea really what she was talking about."

Presentation design and delivery

The design and delivery of the presentation content was another important construct in Presenter Presence as highlighted by the data. Research suggests (Anderson, 2011; Pollard et al., 2014) that course design and organization plays an important role in facilitating instructor presence, the presenters investigated here established their presence in how they presented the

course content, using some multimedia components and integrating activities that engaged attendees to interact with each other and the presenters during the sessions. Tu (2000) emphasized the connection between perceived presence and academic success in online courses and further linked the development of social presence in online courses to course design. Presenters sustained their online presence by integrating consistent feedback mechanisms into the sessions.

Presenters described designing presentations that were academically rigorous with components of personal experiences. Attendees described presentations that were relevant and substantiated by facts. They also described a few presenters who could perform multiple tasks at once (e.g., posting links and resources in the chat box while speaking and answering questions).

Knowledge and Experience

Knowledge & Experience, one of the newer categories adopted from the work of Whiteside (2015), was another category that did not emerge as predominant in building social presence in a professional online conference. However, this construct did not appear to be as relevant as the original three categories of social presence. Although presenters did use pedagogical techniques to gauge attendees prior knowledge, experiences, and influences on their learning (Dikkers, Whiteside, & Lewis, 2012; Whiteside, 2015), attendees did not have a high occurrence of sharing personal tips and ideas. In online courses, Knowledge & Experience occurs when instructors design assignments that ask students to make connections with other aspects of their lives (Dikkers et al., 2012), something presenters probably had little time to integrate into their conference sessions. Additional resources were manifested most often when presenters made references to other scholars and publications as in-text citations on their slides, verbally during their talks, and in slide at the end of their presentations.

Conclusions for Research Question 2: How do attendees and presenters perceive social presence in a professional online conference?

Community Cohesion explored the extent to which the participants came together as a community. The indicators, according to Rourke et al. (2001) are vocatives, using inclusive pronouns, phatics and salutations. The linguistic inquiry and word count analysis indicated that of the top 500 words used in the sample, 10% were social or words that made reference to other people (e.g., they, she, us, talk, friends). A high level of social words indicates people who are more outgoing and more socially connected with others (Pennebaker et al., 2015). The percent of social words used by the participants in this sample did not demonstrate a very high level of social connectedness.

The transcript analysis for participants indicated Community Cohesion as the second most manifested social presence category at 19%. Vocatives followed by group reference were the behaviors most manifested of the five indicators in this category. Based on several years of experience participating in the TCC Conference, the researcher believes that Community Cohesion would have had a higher count, especially the indicator for salutations and greetings. Moderators and presenters at the conference commonly start their sessions with greetings and an ice breaker, such as displaying a map on the whiteboard and having participants indicate where they are located. However, this was not captured in any of the sessions that were a part of this study as the recordings began and ended as soon as the presenters started their presentations and ended when the time was up. This would have made an important comparison to the findings of Shackelford and Maxwell (2012) and Stepich and Ertmer (2003) who indicate that introductions may allow students to start building online community early on, which allows them more time to develop a stronger sense of community. This limitation provides an opportunity for future

research on how important it is for organizers of professional online conferences and presenters to provide opportunities for attendees to get to know one another early in the conference.

The survey data shows an above average perception of community. In the items testing for Group Cohesion, as the category was called in the survey, a majority of participants thought the chat discussions helped them to develop a sense of community. They also felt that participants in the session acknowledged their point of view.

On the whole, attendees who were interviewed for this study agreed that a community of learners had developed during the TCC Conference. However, this was presented with several caveats. Community, like presence, was formed if people had actively participated in the sessions, a perception upheld by studies asserting that communities are developed in an online learning environment through promoting interaction (Palloff & Pratt, 2001; Shackelford & Maxwell, 2012; Stepich & Ertmer, 2003). Dawson, (2006) found that interaction explains a significant proportion of variance in community developed by online students. This could help explain the similar results in a professional online conference. A sense of community existed for attendees who were regulars at the TCC Conference. With over half of responders to the survey indicating they had attended a TCC Conference more than once, a sense of familiarity existed among the attendees who were able to get reacquainted with each other in the sessions and on social media. Attendees perceived participation in social media extended their connections beyond of the TCC Conference. Facebook and twitter dominated the social media tools utilized in this conference and enhanced the interaction and the sense of community. For many, using social media had a positive impact on participant's conference experience. Respondents to the 2015 TCC Conference survey indicated social media was useful as a conference management tool, as a discussion tool, and as a learning tool (Castro, 2015). Some participants responded that

it helped them to stay up to date with conference events and keep track of upcoming sessions because of the notifications they would receive (Castro, 2015). Others indicated that it extended their involvement with a wider audience, made them feel like a part of a community, and more engaged in the conference because of the interactivity with others (Castro, 2015).

Presenters, on the other hand, had mixed feelings about whether or not a community was developed in their session and in the TCC Conference overall. Time and whether presenters had participated in a previous years' TCC Conference or in other sessions during the week made a difference in whether they felt a community was formed. For those familiar with the TCC Conference, an online community was formed because presenters made it a point to attend each other's sessions and tweet about it on social media. Some presenters mentioned that the level of interaction in their sessions led them to believe an online community was being formed. Witnessing the lively interactions between the attendees' in the chat box and with the presenters, and 'seeing' each other at various sessions throughout the three days gave presenters the impression of community formation.

The TCC Conference is organized to utilize an array of communication modes to promote interaction besides social media. The opportunity to form an online community outside the formal presentations was made available to everyone registered for the TCC Conference that included visiting the Coconut Café, a virtual lounge where TCC Conference participants could hang out and meet other TCC participants. However, very few participants continued their interactions or discussions in the Coconut Café. Lack of time, other professional and personal obligations, and the time difference between Hawaii and other locations around the world were noted as to participants had little social interaction with others in the conference. A few mentioned that socializing online did not interest them.

An online conference would seem to attract participants who are predisposed to online interaction with peers. Yet, most comments, questions and discussions originated from a relatively small portion of participants. Sometimes more than half of attendees lurked or were completely silent. Could this be, as one participant admitted, due to being more focused on reading and listening closely to the discussions or because the proliferation of comments from a few online attendees frightened off or intimidated other attendees? In a study on student communication styles, Burniske (as cited in Tu & Curry, 2004) asserts students need time to apply communication styles to reading, interpreting and composing their online discussions. Perhaps the same is true for online conference attendees and their online communication styles. This phenomenon is apt for further investigation.

Conclusions for Research Question 3: How does social presence influence the conference experience of attendees and presenters in a professional online conference?

Social presence has been researched in the field of online education for more than two decades. It was therefore a natural extension to explore participant perceptions of their professional online conference experience. Data from the survey and interviews were used to look deeper into this phenomenon.

Perceived satisfaction and perceived learning were included in the survey. The results indicate that survey respondents strongly agreed that they were stimulated to do additional reading or research on topics discussed in the online sessions they attended. Just as noteworthy were the significant number of respondents who reported that they were highly satisfied with their learning in the session. Participants were also very satisfied with participating in the chat discussions, and satisfied with the interaction with other attendees. Particularly impressive was the 100% approval rating respondents gave on their satisfaction with the presenters.

Besides perceived learning and perceived satisfaction, responses from the interviews produced four broad themes that emerged as a result of how social presence influenced the conference experience for both attendees and presenter, including; (a) presence, (b) interaction, (c) feedback, and (d) online community.

Presence

The majority of participants indicated that establishing their own presence was important. This coincides and builds off previous literature regarding the importance of presence for students and instructors in an online course (Garrison et al., 2000; Richardson, Besser, Koehler, Lim, & Strait, 2016; Richardson & Swan, 2003; Stone & Chapman, 2006; Swan, 2002). The strategies participants used to establish and manifest their presence varied greatly. Attendees described approaches that made connections with other attendees and presenters in the sessions, including being approachable, engaging, and supportive in how they behaved via the language they used in the chat messages they posted. Presenters, having both textual and audio communication options, described using verbal and non-verbal behaviors to bridge the physical and psychological distance between themselves and their audience, being aware and observant of what was happening around them while presenting, and demonstrating expertise.

Interaction

The activities and discussions initiated by the presenters resulted in attendee chat posts that influenced these interactions. Similar to the different types of interactions found in online instruction (Davidson-Shivers & Rasmussen, 2006; Moore, 1989; Wagner, 2001) attendee-presenter interaction was the prevailing type, which occurred as a result of the presenters and attendees communicating predominantly with each other. Interactivity occurred through the usage of some of the communication tools that were available to presenters in the Blackboard Collaborate platform, although very few presenters mentioned utilizing the interactive tools to

engage with their audience. This was somewhat surprising to the researcher, being that the TCC Conference is about engaging in discussions regarding innovations and practices related to the use of technology for teaching and learning. In a recent study conducted by Columbia University, most online courses tended to be text-heavy with few courses incorporating auditory or visual stimuli and well-designed instructional software (Community College Research Center, 2013). They assert that technology tools can help instructors to establish a knowledgeable and approachable presence vital for a strong online course (Community College Research Center, 2013). In this study, the presenters used more traditional methods of engaging with their audience similar to what is found in face-to-face conferences. They felt delivering content and substantially interacting with the attendees in their sessions was a challenge given the limited time available in the sessions. This coincides with the results of a recent study by Leafman (2015), who learned that the multiple roles of the instructor may be causing a sense of being overwhelmed by trying to be all things to all students while a master of the latest technology. In the end, the instructor – whether in the classroom or in a conference session -- is left with making a choice between creating and presenting meaningful content or dynamic multimedia content. In this study, technology, took a back seat to content.

Feedback

Monitoring and responding to the chat box messages was a critical method of communicating between presenters and attendees in the sessions. Monitoring and responding to the chat box messages appear to be more important in this online experience than responding to raised hands in a face-to-face conference. Providing timely feedback was very important in the opinions of the attendees interviewed, although attendees were divided on whether it was better for presenters to respond to questions or comment on attendee posts by posting to the chat box

themselves versus acknowledging the questions and responding to comments aloud during the session. Regardless of what method was chosen, attendees felt it was important for the presenter to be paying attention and responding to attendees' questions. Presenters developed strategies to handle monitoring the chat box and responding in a timely fashion by splitting up the task with a co-presenter so that when one person was not presenting, the other would manage the chat area. For those presenters without co-presenters, monitoring the chat box was a balancing act between presenting on the content and engaging with the audience.

Online Community

Attendees and presenters had different opinions about whether or not an online community was formed during the sessions and overall at the conference. Attendees felt that community, like presence, was formed if people had actively participated in the sessions, had participated in a prior TCC Conference, and had used social media to extend their connections beyond of the TCC Conference. Social media enhanced the interaction and the sense of community for those who used it. Presenters, on the other hand, had mixed feelings about whether or not a community was developed in their session and in the TCC Conference overall. Time and whether presenters had participated in a previous years' TCC Conference or in other sessions during the week made a difference in whether they felt a community was formed.

Limitations

Prior research studies help lay a foundation for understanding the research problem being investigated. Studies on social presence in online courses, rather than in other professional online conferences, were used to make comparisons of the various constructs here since no research has been published about the topic of this research. The data analyzed was limited to one professional online conference. A study that included other professional online conference may

have produced different results. The study was also limited by time since it was collected over the course of three weeks. Comparing results based on the TCC Conference over multiple years could prove valuable.

There were missed opportunities for coding for social presence indicators, specifically for Community Cohesion, in the recorded sessions due to the recordings beginning and ending as soon as the presenters started and completed their presentations, thus missing a wealth of discussions that usually occur between attendees in the chat box and for the presenters via their audio communication with the attendees. Blackboard Collaborate also may not have captured the private chat messages that may have occurred between attendees or between attendees and presenters as this tool currently does not exist with the software.

Coding bias in the transcript content analysis, especially when coding for Presenter Involvement and Knowledge & Experience, may have occurred as these were two new categories recently included in the CoI model without reference to their use in other research studies. Conducting content analysis without being able to refer back to the participants about the meaning behind their postings was also problematic.

Language in the survey could have introduced another limitation to the study. Nineteen items in the survey were adapted from three previous studies that have been critiqued for not adequately measuring the various indicators in the social presence category. Conflicts exist between the items in the survey and the indicators of social presence. The other four items in the survey were developed by the researcher and have never been used in previous studies. The Likert scale used in these four items should have been defined as 1=Very dissatisfied; 2=Dissatisfied; 3=Neither; 4=Satisfied; 5=Very satisfied. Instead, the researcher created the following scale, 1=Very dissatisfied; 2=Not satisfied; 3= Neutral; 4=Satisfied; 5=Very satisfied,

which may have confused respondents. Interview data may have posed limitations and may not have offered a true representation of all perspectives, especially regarding gender, as the majority of interviewees were women. Interview questions should have also included questions about perceived learning and satisfaction.

The most limiting factor is the small number of participants in the study; therefore, the findings cannot be generalized to larger populations (Stake, 1995). The six cases are not "sampling units" (Yin, 2014, p. 40) from which generalizations to a larger population can be made. However, a small number of participants are an important feature of the case study approach with its strength being greater depth rather than breadth (Stake, 1995) and to expand and generalize theories rather than to generalize statistics (Yin, 1994).

Implications

Implications of the findings of this study to professional online conferences are many. A major contribution of this research involves the concept of time. Researchers have questioned what influence time has on social presence (Lin, & Laffey, 2004; Lowenthal & Lowenthal, 2010; Tu & Corry, 2004). Within the confines of time typically faced by presenters in online conference sessions, both the presenter and attendees were able to manifest social presence in 20 minutes. In fact, Case F, although only a 20-minute session, had a higher social presence density than three other 45-minute presentations in this conference. To overcome the constraint of the session duration the presenter used community building and interaction to make a strong connection to her audience. Where she did not engage by posting in the chat box, she made up for in the verbal responses she provided the attendees and her use of technology in the shared activities, thus relying on audio and visual skills rather than written communication.

Professional online conference presenters and attendees require skills to be competent online presenters and learners, and must modify behaviors from the traditional in-person conference to fit the environment of an online conference. The full potential of this evolution can be realized if those engaged in this type of online learning and engagement are skilled, knowledgeable, and equipped to manifest their social presence rather than being bystanders. In Case F, social presence behaviors were accelerated. Perhaps the urgency to develop their social presence was created by the short duration of the session. Future investigation is needed, especially since only one 20-minute session was used in this sample. The time it takes to build social presence among a community of learners and the details of this adjustment process for attendees and presenters needs further consideration.

Another contribution of this research involves the addition of two new indicators to the Interaction Intensity category; Appreciation and Feedback. The researcher quickly discovered in conducting the transcript content analysis that no indicator existed for coding the expressions of "thank you." This was an acknowledgement presenters and attendees gave each other during the presentation and at the end of the presentation. The researcher included Appreciation as a new indicator under the Interaction Intensity category because it became immediately apparent that this was an indicator that needed to be coded differently from "acknowledgement" or "compliments / agreement." Unlike synchronous online courses where students are more likely to say or type 'good night' or utter another form of greeting or salutation, presentations are one-time experiences where participants are together for a very short period and 'thank you' is an expression similar to applauding at an in-person conference whereby the audience is interacting with the presenter in the form of an appreciative reaction.

No indicator existed for answering another participant's question. There are indicators for agreeing, disagreeing, and asking questions but none for answering a question. The researcher included Feedback/Answer as an indicator to code instances when an attendee provided an answer to another attendee's post or to the presenter's question.

Using MAXQDA+ to map the transcript content analysis of the online discussions allowed for the exploration of connections between the presenter and the social presence behaviors manifested the most. This social presence network analysis was the first time social presence was visually coded and mapped similar to the mapping and measuring of social network analysis. The software allowed for connections between the various indicators to the text by lines with seven levels of thickness. The thickness of each line was defined by the number of text segments coded with the particular code – the thicker the line, the higher the number of coded segments.

Most importantly, a contribution the researcher has provided by conducting this study is ascertaining some best practices emulated by highly effective professional online presenters that can be used by future presenters in online conferences. This includes:

1. Integrating quick social activities to establish connection and relationships before jumping into the content of the presentation.
2. Including a biography that combines professional, academic and personal information about themselves at the beginning of the presentation.
3. Including a photo of themselves in the introductory slide.
4. Providing ways for participants to connect with them after the conference ends via email or social media (e.g., twitter, Instagram, LinkedIn).

5. Providing interactivity within the presentation through questions or polls that invite learner participation.
6. Integrating one or two technology tools to enrich the session content.
7. Providing prompt and continuous feedback either verbally or in the chat box.
8. Modeling social presence cues, such as humor, encouragement and addressing a person by name.
9. Using a tone of voice that is engaging, friendly, and positive to portray a positive sense of self.
10. Including a moderator or facilitator may be needed to ensure the active participation of attendees engaged in the chat discussions.

Just as Stephen Covey (2004) developed *The 7 Habits of Highly Effective People*, so too can presenters in professional online conferences learn effective habits to skillfully present, interact, and build community. Just as research helps build "better" models for teaching online courses, a model on how to present the information and materials to attendees in a conference session and incorporate the social aspects of learning in both the design and presentation of online sessions can also be built. Online presentations are most effective when conceived as inherently social and designed with social interactions between presenters and attendees in mind.

Recommendations for Future Research

Limitations necessitate future research. The following areas are advocated for future research that will study social presence in other professional online conferences:

1. How important are various indicators of presenter presence for attendees in a session?
2. What indicators of presenter presence do attendees consider to be most important in a session?

3. Does the type of presentation influence the type of presence manifested by presents and attendees?
4. How much time does it take for presenters and attendees to build their social presence.
5. What does Presenter Involvement manifest as in other contexts? Are their indicators of this category that need to be included?
6. What influence does gender have on the conference dynamics?
7. Does gender influence social presence?
8. How often are recorded sessions reviewed by participants post-conference?
9. What is missed from viewing recorded sessions that is gained from being in the live sessions?
10. What are participants learning or networking expectations and needs and then determine if these needs are met.

Summary

Most, if not all, academics and experts attend conferences as a part of their professional development, and yet it is an under-researched activity, especially in the context of a professional online conference. Little attention has been paid either to developing a theoretically informed understanding of conference practices as social and knowledge building events, or to assessing the extent to which participants build their social presence as part of a learning community. This study addressed these issues in the context of a multiple case study conducted using the Community of Inquiry framework.

With advancements in technology and the convenience of time, place, and cost, many more online learning opportunities will be offered every year. The need to provide technology-enabled learning that professionals can participate in, wherever and whenever they want will also

increase. Easy to access and convenient, professional online conferences are an effective mode of presenting and learning for professionals who can fit in the short bursts of attending these events into their schedules. Though technological advances have made the delivery of professional online conferences possible in real time, much human effort that goes into creating and delivering an impactful session.

One comment often discussed in the literature is the loss of human touch in a fully online conference (Bell, 2011; Boyle, 2013; Oualha & Matula, 2009). Many presenters struggle to create a positive and supportive online environment similar to what they can achieve in their face-to-face sessions. Since online participants cannot interact with each other in person, fear exists that will affect learning and satisfaction. The purpose of this multiple-case study was to examine the role of social presence in a professional online conference by focusing on presenters and attendees and how they projected themselves in a community of inquiry. Analysis of six recordings of interactions during live presentations using the Blackboard Collaborate platform revealed that presenters and attendees manifest social presence through different preferences of specific tools and communication styles as well as through informal attempts at social interaction.

APPENDIX A
IRB INFORMED CONSENT FORM

Office of Research Compliance
Human Studies Program

UNIVERSITY of HAWAI'I® MĀNOA

February 19, 2016

TO: Luisa Castro
Curtis Ho, Ph.D.
Principal Investigators
Learning Design & Technology

FROM: Denise A. Lin-DeShetler, MPH, MA
Director

SUBJECT: CHS #23729 - "Examining Social Presence in a Professional Online Conference"

This letter is your record of the Human Studies Program approval of this study as exempt.

On February 19, 2016, the University of Hawai'i (UH) Human Studies Program approved this study as exempt from federal regulations pertaining to the protection of human research participants. The authority for the exemption applicable to your study is documented in the Code of Federal Regulations at 45 CFR 46.101(b) (Category 2).

Exempt studies are subject to the ethical principles articulated in The Belmont Report, found at http://www.hawaii.edu/irb/html/manual/appendices/A/belmont.html

Exempt studies do not require regular continuing review by the Human Studies Program. However, if you propose to modify your study, you must receive approval from the Human Studies Program prior to implementing any changes. You can submit your proposed changes via email at uhirb@hawaii.edu. (The subject line should read: Exempt Study Modification.) The Human Studies Program may review the exempt status at that time and request an application for approval as non-exempt research.

In order to protect the confidentiality of research participants, we encourage you to destroy private information which can be linked to the identities of individuals as soon as it is reasonable to do so. Signed consent forms, as applicable to your study, should be maintained for at least the duration of your project.

This approval does not expire. However, please notify the Human Studies Program when your study is complete. Upon notification, we will close our files pertaining to your study.

If you have any questions relating to the protection of human research participants, please contact the Human Studies Program at 956-5007 or uhirb@hawaii.edu. We wish you success in carrying out your research project.

1960 East-West Road
Biomedical Sciences Building B104
Honolulu, Hawai'i 96822
Telephone: (808) 956-5007
Fax: (808) 956-8683

APPENDIX B
LETTER OF SUPPORT FROM TCCHAWAII.ORG

College of Education
Department of Learning Design & Technology

UNIVERSITY of HAWAI'I® MĀNOA

January 10, 2016

Office of Research Compliance
Human Studies Program
1960 East-West Road
Biomedical Sciences Building 104
Honolulu, HI 96822

To Whom It May Concern:

It is our pleasure to write a letter in support of Luisa Castro's research on online learning communities and social interaction being submitted to the Human Studies Program at the University of Hawaii (UH).

Luisa is a doctoral student at UH Manoa's College of Education Learning Design and Technology Department and is expected to complete all degree requirements for her doctorate by the Fall 2016.

As a volunteer for the last three years at the *Teaching, Colleges & Community Worldwide Online Conference* (TCC Conference), Luisa has worked at the conference in various capacities from presentation reviewer to conference session moderator. We know her ability to conduct sound research while keeping the upmost professionalism. We trust her to work with integrity and respect during her interaction with the TCC Conference participants and to keep the information that she collects confidential and the data stored in a secure manner.

In conclusion, we fully support Luisa's efforts in her research of the TCC Conference to improve professional online conferences, by exploring the types of communication that occur in online conference sessions and how these types of communication contribute to social interaction and the development of a community within the conference.

Sincerely,

Curtis P. Ho, Ph.D., Professor and Chair — Date: 1/10/2015
Learning Design & Technology
University of Hawaii at Manoa
TCC Conference Coordinator

Bert Kimura, Ph.D., Emeritus Professor — Date: 1/10/2015
University of Hawaii, Kapi'olani CC
TCC Online Conference Co-Founder and Coordinator

1776 University Avenue
Wist Hall, Room 232
Honolulu, Hawai'i 96822
Telephone: (808) 956-7671
Fax: (808) 956-3905
Website: http://etec.hawaii.edu

APPENDIX C

NOTICE TO 2016 TCC CONFERENCE PRESENTERS

Presenter Notice

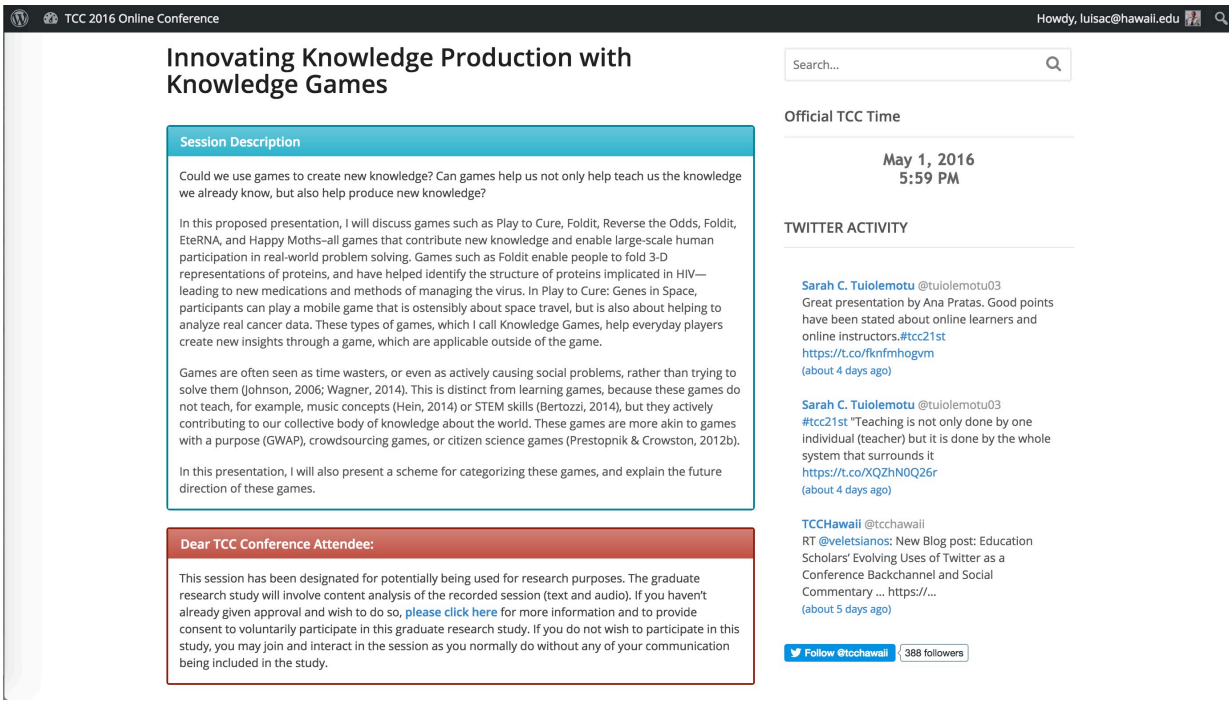
Dear TCC Presenter:

Congratulations in being accepted as a presenter at the 2016 *Teaching, Colleges & Community Worldwide Online Conference* (TCC Conference). I am contacting you to request your participation in a graduate research study.

TCCHawaii seeks to improve the online conference experience and learning process in the TCC Conference. Professional online conferences are growing in popularity and use. Organizers need to be informed about what makes an effective professional online conference environment. This graduate research project hopes to inform the design and implementation of professional online conferences by using a content analysis approach to categorize all the text-based and audio communication that occurs within your presentation session.

If you agree to participate in this study, please click **here** for more information and to consent to your voluntary participation.

APPENDIX D
NOTIFICATION ON CONFERENCE WEB SITE



NOTE: Data from this session was not used in this study. This is an example of what conference participants saw on the TCC Conference web site.

APPENDIX E
ATTENDEE RECRUITMENT AND CONSENT

University of Hawai'i
Consent to Participate in A Research Study

My name is Luisa F. Castro and I am a doctoral candidate in the Department of Learning Design and Technology at the University of Hawaii's College of Education. I am conducting a research study under the guidance and supervision of my advisor, Dr. Curtis Ho. In an effort to improve professional online conferences, I will examine the communication and interaction that takes place in online conference environment between presenter and attendee as well as between attendees themselves.

Study Description:
• **Content Analysis**: If you decide to take part in the session, you will simply need to be present. The conference organizers will record the session for future viewing.

• **Survey**: If you decide to take part in the survey, you will be asked to answer 23 questions immediately after the conference session you are presenting in. Completing the survey will take approximately 5 minutes.

• **Interview**: If you participate in the one-on-one interview, I will connect with you on Blackboard Collaborate at a time convenient for you. The interview will consist of 11 open ended questions and take approximately 30 minutes. I will audio-record the interview so that I can later transcribe it and analyze the responses.

Benefits and Risks: There is minimal risk to you as a participant in this study, only minimal sacrifice of your valuable time. There will also be no direct benefit to you for taking part in this research study.

Right of Refusal to Participate and Withdraw: Participation is completely voluntary. You are free to choose or refuse to participate in this research study. You may withdraw from the study at any time without any adverse effect on your participation in the online conference.

Confidentiality: All information will be kept in a safe and secure place. Only Dr. Ho and I will have access to the information. The University of Hawaii Human Studies Program has the right to review research records for this study. When I report the results of my research study, I will use pseudonyms and report my findings in a way that protects your privacy and confidentiality to the extent allowed by law.

Questions: If you have any questions about this study, please call or email me at 808.895.4775 or luisac@hawaii.edu. You may also contact my adviser, Dr. Curtis Ho at 808.956.7771 or curtis@hawaii.edu. If you have questions about your rights as a research participant, you may contact the UH Human Studies Program at 808.956.5007 or uhirb@hawaii.edu.

Thank you for your time and consideration. And thank you in advance for your participation in this research study. Please click on the **NEXT** button to proceed.

Sincerely,
Luisa F. Castro

LTEC Doctoral Candidate
University of Hawaii at Manoa, College of Education

Consent: Please indicate either "Yes" or "No" to the following:

***1. I agree to participate in the research study. I understand the purpose and nature of this study and I am participating voluntarily. I understand that I can withdraw from the study at any time, without any penalty or consequences.**

- Yes
- No

***2. I grant permission for the data generated from this session to be used in the researcher's publications on this topic.**

- Yes
- No

***3. I grant permission for the data generated from this survey to be used in the researcher's publications on this topic.**

- Yes
- No

***4. I grant permission for the data generated from this interview to be used in the researcher's publications on this topic.**

- Yes
- No

****5. I grant permission for the interview session to be recorded and saved for purpose of review by the researcher.***

- Yes
- No

***6. Please type your name and email address in the box below to indicate agreement to participate in this study.**

Please print a copy of this page for your reference.

APPENDIX F
PRESENTER CONSENT

University of Hawai'i
Consent to Participate in a Research Study

My name is Luisa Castro and I am a doctoral candidate in the Department of Learning Design & Technology at the University of Hawaii's College of Education. I am conducting a research study under the guidance and supervision of my adviser, Dr. Curtis Ho. In an effort to explore professional online conferences, I will examine the communication and interaction that takes place in an online conference environment between presenter and attendees as well as between attendees themselves.

Study Description:
• **Content Analysis**: If you decide to take part in the session, you will simply need to present. The conference organizers will record the session for future viewing.

• **Survey**: If you decide to take part in the survey, you will be asked to answer 23 questions immediately after the conference session you are presenting in. Completing the survey will take approximately 5 minutes.

• **Interview**: If you participate in the one-on-one interview, I will connect with you on Blackboard Collaborate at a time convenient for you. The interview will consist of 4 open ended questions and take approximately 30 minutes. I will audio-record the interview so that I can later transcribe it and analyze the responses.

Benefits and Risks: There is minimal risk to you as a participant in this study, only minimal sacrifice of your valuable time. There will also be no direct benefit to you for taking part in this research study.

Right of Refusal to Participate and Withdraw: Participation is completely voluntary. You are free to choose or refuse to participate in this research study. You may withdraw from the study at any time without any adverse effect on your participation in the online conference.

Confidentiality: All information will be kept in a safe and secure place. Only Dr. Ho and I will have access to the information. The University of Hawaii Human Studies Program has the right to review research records for this study. When I report the results of my research study, I will use pseudonyms and report my findings in a way that protects your privacy and confidentiality to the extent allowed by law.

Questions: If you have any questions about this study, please call or email me at 808.895.4775 or luisac@hawaii.edu. You may also contact my adviser, Dr. Curtis Ho at 808.956.7771 or curtis@hawaii.edu. If you have questions about your rights as a research participant, you may contact the UH Human Studies Program at 808.956.5007 or uhirb@hawaii.edu.

Thank you for your time and consideration. And thank you in advance for your participation in this research study.

Sincerely,
Luisa F. Castro
Doctoral Candidate
University of Hawaii at Manoa
College of Education

***1. I agree to participate in the research study. I understand the purpose and nature of this study and I am participating voluntarily. I understand that I can withdraw from the study at any time, without any penalty or consequences.**

- Yes
- No

***2. I grant permission for the data generated from this session to be used in the researcher's publications on this topic.**

- Yes
- No

***3. I grant permission to post the survey that I, and the session participants, can respond to at the conclusion of my presentation.**

- Yes
- No

***4. I grant permission for the data generated from the survey to be used in the researcher's publications on this topic.**

- Yes
- No

***5. I grant permission for the interview session to be recorded and data to be used in the researcher's publications on this topic.**

- Yes
- No

***6. Please type your name and email address in the box below to indicate agreement to participate in this study.**

Please print a copy of this page for your reference.

APPENDIX G
SURVEY INSTRUMENT

TCC 2016 - END OF SESSION SURVEY

University of Hawai'i
Consent to Participate in a Research Study

My name is Luisa Castro and I am a doctoral candidate in the Department of Learning Design & Technology at the University of Hawaii's College of Education. I am conducting a research study under the guidance and supervision of my adviser, Dr. Curtis Ho. In an effort to explore professional online conferences, I will examine the communication and interaction that takes place in an online conference environment between presenter and attendees as well as between attendees themselves.

If you decide to take part in the survey, you will be asked to answer 23 questions immediately after the conference session you are presenting in. Completing the survey will take approximately 5 minutes.

Benefits and Risks: There is minimal risk to you as a participant in this study, only minimal sacrifice of your valuable time. There will also be no direct benefit to you for taking part in this research study.

Right of Refusal to Participate and Withdraw: Participation is completely voluntary. You are free to choose or refuse to participate in this research study. You may withdraw from the study at any time without any adverse effect on your participation in the online conference.

Confidentiality: All information will be kept in a safe and secure place. Only Dr. Ho and I will have access to the information. The University of Hawaii Human Studies Program has the right to review research records for this study. When I report the results of my research study, I will use pseudonyms and report my findings in a way that protects your privacy and confidentiality to the extent allowed by law.

Questions: If you have any questions about this study, please call or email me at 808.895.4775 or luisac@hawaii.edu. You may also contact my adviser, Dr. Curtis Ho at 808.956.7771 or curtis@hawaii.edu. If you have questions about your rights as a research participant, you may contact the UH Human Studies Program at 808.956.5007 or uhirb@hawaii.edu.

Thank you for your time and consideration. And thank you in advance for your participation in this research study.

Sincerely,
Luisa Castro
LTEC Doctoral Candidate
University of Hawaii at Manoa, College of Education

I grant permission for the data generated from this survey to be used in the researcher's publication on this topic. *
Yes No

Item 1. Gender
- Woman
- Man
- Prefer not to disclose

Item 2. Age
- 18-24 years old
- 25-34 years old
- 35-44 years old
- 45-54 years old
- 55-64 years old
- 65-74 years old
- 75 years or older

Item 3. What is your profession?
- Administrator
- Counselor
- Consultant
- Executive
- K-12 Instructor
- Professor/Academic
- Staff
- University Student
- Other

Item 4. Number of TCC Conferences previously attended
- This is my first TCC Conference
- 2-3
- 4-5
- 6-8
- More than 8

Item 5. Online conference sessions are an excellent medium for social interaction.
Strongly Disagree Disagree Undecided Agree Strongly Agree

Item 6. I felt comfortable conversing through this online medium.
Strongly Disagree Disagree Undecided Agree Strongly Agree

Item 7. I felt comfortable participating in the discussions through this online medium.
Strongly Disagree Disagree Undecided Agree Strongly Agree

Item 8. I felt comfortable interacting with attendees in this session.
Strongly Disagree Disagree Undecided Agree Strongly Agree

Item 9. I felt that attendees in the session acknowledged my point of view.
Strongly Disagree Disagree Undecided Agree Strongly Agree

Item 10. I was able to form distinct individual impressions of some attendees in this session.
Strongly Disagree Disagree Undecided Agree Strongly Agree

Item 11. Getting to know attendees gave me a sense of belonging in the session.
Strongly Disagree Disagree Undecided Agree Strongly Agree

Item 12. Chat discussions helped me to develop a sense of community.
Strongly Disagree Disagree Undecided Agree Strongly Agree

Item 13. Chat discussions tend to be more impersonal than face-to-face conference discussions
Strongly Disagree Disagree Undecided Agree Strongly Agree

Item 14. I am stimulated to do additional reading or research on topics discussed in this online session.
Strongly Disagree Disagree Undecided Agree Strongly Agree

Item 15. I experienced new learning or have new questions as a result of participating in this online session.
Strongly Disagree Disagree Undecided Agree Strongly Agree

Item 16. The presenter(s) created a feeling of online community.
Strongly Disagree Disagree Undecided Agree Strongly Agree

Item 17. The presenter(s) facilitated discussions in the session.
Strongly Disagree Disagree Undecided Agree Strongly Agree

Item 18. I was able to form distinct individual impressions of the presenter(s) in this session.
Strongly Disagree Disagree Undecided Agree Strongly Agree

Item 19. I felt comfortable conversing with the presenter(s) through this online medium.
Strongly Disagree Disagree Undecided Agree Strongly Agree
Add Question Separator Page Break

Item 20. Please rate your level of satisfaction with the interaction with other attendees in this session.
Very Dissatisfied Not Satisfied Neutral Satisfied Very Satisfied

Item 21. Please rate your level of satisfaction with participating in the chat discussions in this session.
Very Dissatisfied Not Satisfied Neutral Satisfied Very Satisfied

Item 22. Please rate your level of satisfaction with your learning in this session.
Very Dissatisfied Not Satisfied Neutral Satisfied Very Satisfied

Item 23. Please rate your level of satisfaction with the presenter(s) in this session.
Very Dissatisfied Not Satisfied Neutral Satisfied Very Satisfied

THANK YOU for your participation in this survey. If you haven't done so already, please type your name and email address in the box below if you would like to voluntarily participate in a one-on-one interview a week following completion of the TCC Conference.

First Name:
Last Name:
Phone:
Email Address:

APPENDIX H
AUTHOR APPROVAL FOR USE OF SOCIAL PRESENCE SURVEY

UNIVERSITY of HAWAI'I SYSTEM

Luisa Castro <luisac@hawaii.edu>

Permission to use Social Presence Survey

4 messages

Luisa Castro <luisac@hawaii.edu> Mon, Dec 28, 2015 at 4:01 PM
To: kswan4@uis.edu

Dear Dr. Swan: I met you breifly at the E-Learn 2015 Conference in Hawaii. You gave your presentation on "Building Online Learning Communities" and I came up to you after your talk to let you know that I was going to be conducting my dissertation on examining social presence in professional online conferences. You provided me with your business card and encouraged me to contact you with any questions.

I am contacting you to ask permission to use the Social Presence Survey that you developed with Dr. Shih and published in the article "On the Nature and Development of Social Presence in Online Course Discussions". I would like to adapt your questions to accommodate the participants and the environment that I will be studying.

For instance:

1. Online or web-based education is an excellent medium for social interaction. WILL BE CHANGED TO

1. Online conferences are an excellent medium for social interaction.

I've struggled between using the CoI survey questions developed by Arbaugh et al., in 2008 and validated by you and the other researchers in 2008 on social presence and the Social Presence Survey you co-developed in 2005. I think your questions are better suited to my study and am wondering if you know of others who have used your survey as I have been trying to find such studies to review.

I look forward to hearing back from you at your earliest convenience.

Thank you,
Luisa F. Castro
Doctoral student at the University of Hawaii at Manoa

Swan, Karen <kswan4@uis.edu> Mon, Dec 28, 2015 at 4:06 PM
To: Luisa Castro <luisac@hawaii.edu>

You absolutely have my permission to use the survey and to adapt it -- we adapted it from work done by Jennifer Richardson and reported in Richardson & Swan, 2003 in what was then the journal of asynchronous learning networks and is now the Online Learning Journal. Let me know if there's anything else I can do for you.

Sent from my iPhone
[Quoted text hidden]

APPENDIX I
ATTENDEE INTERVIEW QUESTIONS

INTERVIEW QUESTIONS FOR ATTENDEES

1. What did you think about when you were preparing to post a message to the session discussion? Did you think about how you would sound to others? Did you think about how what you say would influence how others think of you?

2. Did you use any strategies to put "personal" touches in your messages? If so, why did you want to make yourself sound more personal in chat discussions?

3. How did the ways other attendees wrote their messages influence your impressions of them? Did others' language use influence that of yours? If so, how?

4. What did you think about when you were responding to others' message?

5. How would you define an online community? Was a community formed in this session? In this conference?
6. What were the criteria you used while choosing which messages to respond to?

7. What are your impressions of the presenter in this session? How were these impressions formed?

8. Did your presenter's style of presenting influence the way you constructed your messages in the session? If so, how?

9. Did the presenter participate in the chat discussions? What do you think about this?

10. As the tone of your voice is not available in the online session, did you find it as a big constraint when communicating with other attendees? If so, what did you do to overcome the constraints?

11. Did you participate in the TCC Happy Hour or any other TCC social event? Why or why not?

APPENDIX J
PRESENTER INTERVIEW QUESTIONS

INTERVIEW QUESTIONS FOR PRESENTERS

1. What comes to mind when I mention the words “instructor presence”?
2. How do you construct your own presence, in your conference session?
3. What strategies do you use to promote instructor presence in your conference session?
4. How do you sustain instructor presence in your conference session?
5. How would you define an online community? Was a community formed in this session? In this conference?
6. Did you participate in the TCC Happy Hour or any other TCC social event? Why or why not?

APPENDIX K
AUTHOR APPROVAL FOR USE OF SOCIAL PRESENCE MODEL

UNIVERSITY of HAWAI'I SYSTEM

Luisa Castro <luisac@hawaii.edu>

Re: Social Presence Model

4 messages

Luisa Castro <luisac@hawaii.edu> Mon, Nov 2, 2015 at 1:08 PM
To: awhiteside@ut.edu

Dear Dr. Whiteside: I am a doctoral student and the University of Hawaii at Manoa's Learning Design and Technology Department. I was initially going to use the Social Presence Coding Scheme for my dissertation but then came across your article on "Introducing the Social Presence Model to Explore Online and Blended Learning Experiences". I am very curious about the two new categories you have developed -- "Instructor Involvement" and "Knowledge and experience."

What would be your Code and Definition for Instructor Involvement and Knowledge and Experience? What do Knowledge and Experience look like in transcripts?

For instance, in your definition of the Affective Association category, you state that it "targets instances of emotion, humor and self-disclosure related to personal emotion", which is a little easier for me to understand and see examples of in the transcripts but I'm not sure what I would be looking for to code for Knowledge and Experience? Would it be every time a participant refers to their organizations, career titles and positions?

Your insight and assistance would be much appreciated.

Thank you,

Luisa F. Castro
Doc student

AIMEE L. WHITESIDE <AWHITESIDE@ut.edu> Tue, Nov 3, 2015 at 8:23 AM
To: Luisa Castro <luisac@hawaii.edu>

Dear Luisa,

I'm delighted that you are considering the Social Presence Model and coding scheme for your study. I just finished a draft of the codebook, which defines codes for the two new elements of the SPM. I attached it for your consideration, and I'd be happy to answer any questions.

Thank you,

Aimee L. Whiteside, PhD.

Assistant Professor, Department of English and Writing

References

Akayoğlu, S., Altun, A., & Stevens, V. (2009). Social presence in synchronous text-based computer-mediated communication. *Eurasian Journal of Educational Research*, *34*, 1–16.

Akyol, Z., & Garrison, D. R. (2008). The development of a community of inquiry over time in an online course: Understanding the progression and integration of social. *Journal of Asynchronous Learning Environments*, *12*(3-4), 3–22.

Akyol, Z., Vaughan, N., & Garrison, D. R. (2011). The impact of course duration on the development of a community of inquiry. *Interactive Learning Environments*, *19*(3), 231–246.

Anderson, L., & Anderson, T. (2009). Online professional development conferences: An effective, economical and eco-friendly option. *Canadian Journal of Learning and Technology / La Revue Canadienne de L'apprentissage et de La Technologie*, *35*(2). Retrieved from http://cjlt.csj.ualberta.ca/index.php/cjlt/article/view/521

Anderson, L., & Anderson, T. (2010). *Online conferences: Professional development for a networked era*. IAP.

Anderson, S. (2011). *Seductive Interaction Design: Creating Playful, Fun, and Effective User Experiences* (1st ed.). New Riders. Retrieved from http://www.amazon.com/Seductive-Interaction-Design-Effective-Experiences/dp/0321725522

Anderson, T. (1996). The virtual conference: Extending professional education in cyberspace. *International Journal of Educational Telecommunications*, *2*(2), 121–135.

Anderson, T., & Mason, R. (1993). International computer conferencing for professional development: The Bangkok Project. *American Journal of Distance Education*, *7*(2), 5–18.

Anderson, T., Rourke, L., Garrison, D. R., & Archer, W. (2001). Assessing teaching presence in a computer conferencing context. *Journal of Asynchronous Learning Networks*, *5*, 1–17.

Annand, D. (2011). Social presence within the community of inquiry framework. *The International Review of Research in Open and Distributed Learning*, *12*(5), 40–56.

Aragon, S. R. (2003). Creating social presence in online environments. *New Directions for Adult and Continuing Education*, *2003*(100), 57–68. http://doi.org/10.1002/ace.119

Arbaugh, J. B. (2007). An empirical verification of the community of inquiry framework. *Journal of Asynchronous Learning Networks*, *11*(1), 73–85.

Arbaugh, J. B., Cleveland-Innes, M., Diaz, S. R., Garrison, D. R., Ice, P., Richardson, J. C., & Swan, K. P. (2008). Developing a community of inquiry instrument: Testing a measure of the Community of Inquiry framework using a multi-institutional sample. *The Internet and Higher Education*, *11*(3–4), 133–136. http://doi.org/10.1016/j.iheduc.2008.06.003

Arbaugh, J. B., & Rau, B. L. (2007). A study of disciplinary, structural, and behavioral effects on course outcomes in online MBA courses. *Decision Sciences Journal of Innovative Education*, *5*(1), 65–95. http://doi.org/10.1111/j.1540-4609.2007.00128.x

Argyle, M., & Dean, J. (1965). Eye-contact, distance and affiliation. *Sociometry*, *28*, 289–304.

Bangert, A. (2008). The influence of social presence and teaching presence on the quality of online critical inquiry. *Journal of Computing in Higher Education*, *20*(1), 34–61. http://doi.org/10.1007/BF03033431

Baxter, P., & Jack, S. (2008). Qualitative case study methodology: Study design and implementation for novice researchers. *The Qualitative Report*, *13*(4), 544–559.

Beach, M., Coates, S., Hinton, C., & Montoya, D. (2013). By Design: Building Trust in Virtual Teams. *Shared Knowledge Conference Journal*, *1*(1). Retrieved from https://ejournals.unm.edu/index.php/nmskc/article/view/3028

Bell, S. (2011). A conference wherever you are. Retrieved October 25, 2015, from http://lj.libraryjournal.com/2011/10/featured/a-conference-wherever-you-are/#_

Bente, G., Rüggenberg, S., Krämer, N. C., & Eschenburg, F. (2008). Avatar-mediated networking: Increasing social presence and interpersonal trust in net-based collaborations. *Human Communication Research*, *34*(2), 287–318. http://doi.org/10.1111/j.1468-2958.2008.00322.x

Bentley, K. J., Secret, M. C., & Cummings, C. R. (2015). The centrality of social presence in online teaching and learning in social work. *Journal of Social Work Education*, *51*(3), 494–504. http://doi.org/10.1080/10437797.2015.1043199

Bibeau, S. (2001). Social presence, isolation, and connectedness in online teaching and learning: From the literature to real life. *Journal of Instruction Delivery Systems*, *15*(3), 35–39.

Biocca, F., Harms, C., & Burgoon, J. K. (2003). Toward a more robust theory and measure of social presence: Review and suggested criteria. *Presence: Teleoperators and Virtual Environments*, *12*(5), 456–480. http://doi.org/10.1162/105474603322761270

Biocca, F., Harms, C., & Gregg, J. A. (2001). The networked minds measure of social presence: Pilot test of the factor structure and concurrent validity. Presented at the Fourth Presence International Workshop, Philadelphia, PA. Retrieved from http://www.academia.edu/676200/The_networked_minds_measure_of_social_presence_Pilot_test_of_the_factor_structure_and_concurrent_validity

Boyle, J. (2013). Are virtual education conferences worth the time and effort? Retrieved from http://www.emergingedtech.com/2013/09/are-virtual-education-conferences-worth-the-time-and-effort/

Breen, L. (2007). The researcher “in the middle”: Negotiating the insider/outsider dichotomy. Retrieved from http://espace.library.curtin.edu.au/R?func=dbin-jump-full&local_base=gen01-era02&object_id=192294

Burgess, M. L., Slate, J. R., Rojas-LeBouef, A., & LaPrairie, K. (2010). Teaching and learning in second life: Using the community of inquiry (CoI) model to support online instruction with graduate students in instructional technology. *The Internet and Higher Education*, *13*(1–2), 84–88. http://doi.org/10.1016/j.iheduc.2009.12.003

Burnett, C. (2003). Learning to chat: Tutor participation in synchronous online chat. *Teaching in Higher Education*, *8*(2), 247–261. http://doi.org/10.1080/1356251032000052474

Camic, C., Gross, N., & Lamont, M. (2011). *Social knowledge in the making*. Chicago, Ill.; London: University of Chicago press.

Carlon, S., Bennett-Woods, D., Berg, B., Claywell, L., LeDuc, K., Marcisz, N., … Zenoni, L. (2012). The community of inquiry instrument: Validation and results in online health care disciplines. *Computers & Education*, *59*(2), 215–221. http://doi.org/10.1016/j.compedu.2012.01.004

Castro, L. F. C. (2015). Teaching, Colleges and Community Conference 2015 Survey Results. Retrieved from http://tcchawaii.org/

Chapman, D. D., Wiessner, C. A., Morton, J., Fire, N., Stevenson Jones, L., & Majekodunmi, D. (2009). Crossing scholarly divides: Barriers and bridges for doctoral students attending

scholarly conferences. *New Horizons in Adult Education & Human Resource Development*, *23*(1), 6–24.

Chapman, D. D., Wiessner, C. A., Storberg-Walker, J., & Hatcher, T. (2007). New Learning: a different way of approaching conference evaluation. *Knowledge Management Research & Practice*, *5*(4), 261–270. http://doi.org/10.1057/palgrave.kmrp.8500147

Chen, X., Fang, Y., & Lockee, B. (2015). Integrative review of social presence in distance education: Issues and challenges. *Educational Research and Reviews*, *10*(13), 1796–1806. http://doi.org/10.5897/ERR2015.2276

Cherrstrom, C. A. (2012). Making connections: Attending professional conferences. *Adult Learning*, *23*(3), 148–152. http://doi.org/10.1177/1045159512452263

Chou, C. (2001). Formative evaluation of synchronous CMC systems for a learner-centered online course. *J. Interact. Learn. Res.*, *12*(2/3), 173–192.

Chou, C. C. (2002). A comparative content analysis of student interaction in synchronous and asynchronous learning networks. In *Proceedings of the 35th Annual Hawaii International Conference on System Sciences, 2002. HICSS* (pp. 1795–1803). http://doi.org/10.1109/HICSS.2002.994093

Cleveland-Innes, M., & Campbell, P. (2012). Emotional presence, learning, and the online learning environment. *The International Review of Research in Open and Distributed Learning*, *13*(4), 269–292.

Clouder, D. L., Goodman, S., Bluteau, P., Jackson, A., Davies, B., & Merriman, L. (2011). An investigation of "agreement" in the context of interprofessional discussion online: a "netiquette" of interprofessional learning? *Journal of Interprofessional Care*, *25*(2), 112–118. http://doi.org/10.3109/13561820.2010.500445

Cobb, S. C. (2009). Social presence and online learning: A current view from a research perspective. *Journal of Interactive Online Learning*, *8*(3), 241–254.

Collins, K. M. T., Onwuegbuzie, A. J., & Jiao, Q. G. (2007). A mixed methods investigation of mixed methods sampling designs in social and health science research, *1*, 267–294.

Collins, K. M. T., Onwuegbuzie, A. J., & Sutton, I. L. (2006). A model incorporating the rationale and purpose for conducting mixed-methods research in special education and beyond. *Learning Disabilities: A Contemporary Journal*, *4*(1), 67–100.

Community College Research Center. (2013). *Creating an effective online instructor presence*. Retrieved from http://ccrc.tc.columbia.edu/media/k2/attachments/effective-online-instructor-presence.pdf

Covey, S. R. (2004). *The 7 habits of highly effective people: Powerful lessons in personal change*. New York: Free Press. Retrieved from https://www.stephencovey.com/7habits/7habits.php

Cox, G., Carr, T., & Hall, M. (2004). Evaluating the use of synchronous communication in two blended courses. *Journal of Computer Assisted Learning*, *20*(3), 183–193. http://doi.org/10.1111/j.1365-2729.2004.00084.x

Crano, W. D., Brewer, M. B., & Lac, A. (2014). *Principles and Methods of Social Research*. Routledge.

Cui, G., Lockee, B., & Meng, C. (2013). Building modern online social presence: A review of social presence theory and its instructional design implications for future trends. *Education and Information Technologies*, *18*(4), 661–685. http://doi.org/10.1007/s10639-012-9192-1

Daft, R. L., & Lengel, R. H. (1984). Information richness: A new approach to managerial behavior and organizational design. *Research in Organizational Behavior*, *6*, 191–233.

Daniels, J. (2013). Academic conferences in the digital era. Retrieved from http://justpublics365.commons.gc.cuny.edu/2013/03/04/academic-conferences-in-the-digital-era/

Davidson-Shivers, G. V., Muilenburg, L. Y., & Tanner, E. J. (2001). How do students participate in synchronous and asynchronous online discussions? *Journal of Educational Computing Research*, *25*(4), 351–66.

Dawson, S. (2006). Online forum discussion interactions as an indicator of student community. *Australasian Journal of Educational Technology*, *22*(4). http://doi.org/10.14742/ajet.v22i4.1282

de Bruyn, L. (2004). Monitoring online communication: can the development of convergence and social presence indicate an interactive learning environment? *Distance Education*, *25*(1), 67–81. http://doi.org/10.1080/0158791042000212468

December, J. (1997). Notes on defining of computer-mediated communication. *CMC Magazine: What Is CMC? An Overview of Scholarly Definitions*, *4*(1). Retrieved from http://www.december.com/cmc/mag/1997/jan/ferris.html

Delfino, M., & Manca, S. (2007). The expression of social presence through the use of figurative language in a web-based learning environment. *Computers in Human Behavior*, *23*(5), 2190–2211. http://doi.org/10.1016/j.chb.2006.03.001

Dennen, V. P., Darabi, A. A., & Smith, L. J. (2007). Instructor–Learner Interaction in Online Courses: The relative perceived importance of particular instructor actions on

performance and satisfaction. *Distance Education*, *28*(1), 65–79. http://doi.org/10.1080/01587910701305319

de Vries, B., & Pieters, J. (2007). Knowledge sharing at conferences. *Educational Research and Evaluation*, *13*(3), 237–247. http://doi.org/10.1080/13803610701626168

De Wever, B., Schellens, T., Valcke, M., & Van Keer, H. (2006). Content analysis schemes to analyze transcripts of online asynchronous discussion groups: A review. *Computers & Education*, *46*(1), 6–28. http://doi.org/10.1016/j.compedu.2005.04.005

Dewey, J. (1916). *Democracy and education*. New York, NY: Free Press. Retrieved from https://www.gutenberg.org/files/852/852-h/852-h.htm

Dikkers, A. G., Whiteside, A., & Lewis, S. (2012). Get present: Build community and connectedness online. *Learning & Leading with Technology*, *40*(2), 22–25.

Dikkers, A. G., Whiteside, A. L., & Lewis, S. (2013). Virtual high school teacher and student reactions to the social presence model. *Journal of Interactive Online Learning*, *12*(3), 156–170.

Dillman, D. A. (2006). *Mail and Internet Surveys: The tailored design method* (2 edition). Hoboken, N.J: Wiley.

Donnelly, R., & Gardner, J. (2011). Content analysis of computer conferencing transcripts. *Interactive Learning Environments*, *19*(4), 303–315. http://doi.org/10.1080/10494820903075722

Donohoe, A., & Donohoe, A. (2008). Methodological Issues in Computer Transcript Analysis (Vol. 2008, pp. 3695–3700). Presented at the EdMedia: World Conference on Educational Media and Technology. Retrieved from http://www.editlib.org/p/28898/

Dumitru, D. (2012). Communities of inquiry. A method to teach. *Procedia - Social and Behavioral Sciences*, *33*, 238–242. http://doi.org/10.1016/j.sbspro.2012.01.119

Duncan, K., Kenworthy, A., & McNamara, R. (2012). The effect of synchronous and asynchronous participation on students' performance in online accounting courses. *Accounting Education*, *21*(4), 431–449. http://doi.org/10.1080/09639284.2012.673387

Egri, C. P. (1992). Academic conferences as ceremonials: Opportunities for organizational integration and socialization. *Journal of Management Education*, *16*(1), 90–115. http://doi.org/10.1177/105256299201600107

Ekmekci, O. (2013). Being there: Establishing instructor presence in an online learning environment. *Higher Education Studies*, *3*(1), 29–38.

Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative content analysis. *SAGE Open*, *4*(1), 2158244014522633. http://doi.org/10.1177/2158244014522633

Elwood, S., McCaleb, K., Fernandez, M., & Keengwe, J. (2012). A theoretical framework and model towards media-rich social presence design practices. *Education and Information Technologies*, *19*(1), 239–249. http://doi.org/10.1007/s10639-012-9212-1

Farkas, M. G. (2006). A glimpse at the future of online conferences. *American Libraries*, *37*(6), 28–28.

Fisher, M., & Coleman, B. (2001). Collaborative online learning in virtual discussions. *Journal of Educational Technology Systems*, *30*(1), 3–17. http://doi.org/10.2190/CRDK-VNR8-43DX-V4DB

Futris, T. G., Adler-Baeder, F., & Dean, K. J. (2004). Using technology to link researchers and educators: Evaluation of electronic conferencing. *Journal of Extension*, *42*(1). Retrieved from http://www.joe.org/joe/2004february/rb1.php

Garrison, D. R. (1997). Computer conferencing: The post-industrial age of distance education. *Open Learning*, *12*(2), 3–11.

Garrison, D. R. (2007). Online community of inquiry review: Social, cognitive, and teaching presence issues. *Journal of Asynchronous Learning Networks*, *11*(1), 61–72.

Garrison, D. R. (2011). *E-Learning in the 21st century: A framework for research and practice*. London: Routledge/Falmer.

Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education*, *2*(2–3), 87–105. http://doi.org/10.1016/S1096-7516(00)00016-6

Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical thinking, cognitive presence, and computer conferencing in distance education. *American Journal of Distance Education*, *15*(1), 7–23.

Garrison, D. R., & Arbaugh, J. B. (2007). Researching the community of inquiry framework: Review, issues, and future directions. *The Internet and Higher Education*, *10*(3), 157–172. http://doi.org/10.1016/j.iheduc.2007.04.001

Garrison, D. R., Cleveland-Innes, M., & Fung, T. S. (2010). Exploring causal relationships among teaching, cognitive and social presence: Student perceptions of the community of inquiry framework. *The Internet and Higher Education*, *13*(1-2), 31–36. http://doi.org/10.1016/j.iheduc.2009.10.002

Garrison, D. R., Cleveland-Innes, M., Koole, M., & Kappelman, J. (2006). Revisiting methodological issues in transcript analysis: Negotiated coding and reliability. *The Internet and Higher Education*, *9*(1), 1–8. http://doi.org/10.1016/j.iheduc.2005.11.001

Garrison, R. (2009). Implications of online and blended learning for the conceptual development and practice of distance education. *International Journal of E-Learning & Distance Education*, *23*(2), 93–104.

Gay, L. R., Mills, G. E., & Airasian, P. W. (2011). *Educational research: Competencies for analysis and applications*. Retrieved from https://www.amazon.com/Educational-Research-Competencies-Analysis-Applications/dp/0132613174

George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference. 11.0 update* (4th ed.). Boston: Allyn & Bacon. Retrieved from https://books.google.com/books/about/SPSS_for_Windows_Step_by_Step.html?id=AghHAAAAMAAJ

Gerbic, P., & Stacey, E. (2005). A purposive approach to content analysis: Designing analytical frameworks. *The Internet and Higher Education*, *8*(1), 45–59. http://doi.org/10.1016/j.iheduc.2004.12.003

Giesbers, B., Rienties, B., Gijselaers, W. H., Segers, M., & Tempelaar, D. T. (2009). Social presence, web videoconferencing and learning in virtual teams. *Industry and Higher Education*, *23*(4), 301–309.

Graham, P., & Kormanik, M. (2004). Bridging the conference gap: a challenge to enhance the research – practice dialogue. *Human Resource Development International*, *7*(3), 391–393. http://doi.org/10.1080/1367886042000245996

Green, L. (1998). Playing croquet with flamingos: A guide to moderating online conferences. Retrieved from http://eric.ed.gov/?id=ED433014

Gunawardena, C. N. (1995). Social presence theory and implications for interaction and collaborative learning in computer conferences. *International Journal of Educational Telecommunications*, *1*(2), 147–166.

Gunawardena, C. N., Lowe, C. A., & Anderson, T. (1998). Transcript analysis of computer-mediated conferences as a tool for testing constructivist and social-constructivist learning theories. In *Distance Learning 1998* (pp. 139–145). Madison, WI. Retrieved from http://eric.ed.gov/?id=ED422854

Gunawardena, C. N., & McIsaac, M. (2004). Distance education. In D. H. Jonassen (Ed.), *Handbook of research on educational communications and technology* (2nd ed., pp. 355–395). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Gunawardena, C. N., & Zittle, F. J. (1997). Social presence as a predictor of satisfaction within a computer-mediated conferencing environment. *American Journal of Distance Education*, *11*(3), 8–26. http://doi.org/10.1080/08923649709526970

Hample, D., & Dallinger, J. M. (1995). A Lewinian perspective on taking conflict personally: Revision, refinement, and validation of the instrument. *Communication Quarterly*, *43*(3), 297–319. http://doi.org/10.1080/01463379509369978

Hancock, D. R., & Algozzine, R. (2006). *Doing Case Study Research: A Practical Guide for Beginning Researchers*. Teachers College Press. Retrieved from psychoarshad.com/file/file-download/99/

Haythornthwaite, C. A., & Kazmer, M. M. (2004). *Learning, culture, and community in online education: Research and practice*. New York: Peter Lang.

Haythornthwaite, C., & Kazmer, M. M. (2002). Bringing the internet home: Adult distance learners and their internet, home, and work worlds. In B. Wellman & C. Haythornthwaite (Eds.), *The Internet in Everyday Life* (pp. 429–463). Oxford, UK: Blackwell Publishers Ltd. Retrieved from http://doi.wiley.com/10.1002/9780470774298.ch15

Henri, F. (1992). Computer conferencing and content analysis. In A. R. Kaye (Ed.), *Collaborative Learning Through Computer Conferencing* (pp. 117–136). Berlin, Heidelberg: Springer Berlin Heidelberg. Retrieved from http://www.springerlink.com/index/10.1007/978-3-642-77684-7_8

Herring, S. (2004). Computer-mediated discourse analysis: An approach to researching online behavior. In *Designing for Virtual Communities in the Service of Learning* (pp. 338–376). New York: Cambridge University Press.

Herring, S. (2008). Virtual community. *Encyclopedia of Qualitative Research Methods*. Retrieved from http://ella.slis.indiana.edu/~herring/vc.pdf

Heuer, B. P., & King, K. P. (2004). Leading the Band: The Role of the Instructor in Online Learning for Educators. *Journal of Interactive Online Learning*, *3*(1).

Ho, C. P., Kimura, B., & Boulay, R. (2011). Retrospective analysis of a virtual worldwide conference for elearning. *International Journal*, *5*(1), 107–117.

Ho, C. P., Kimura, B., & Narita, S. (2006). Evolution of a virtual worldwide conference on online teaching. In *Proceedings of Distance Learning and the Internet 2006*. Tokyo, Japan.

Hostetter, C., & Busch, M. (2006). Measuring up online: The relationship between social presence and student learning satisfaction. *Journal of Scholarship of Teaching and Learning*, *6*(2), 1–12.

Hung, M. L., & Chou, C. (2015). Students' perceptions of instructors' roles in blended and online learning environments: A comparative study. *Computers & Education*, *81*, 315–325. http://doi.org/10.1016/j.compedu.2014.10.022

Hurt, J. (2011, November 28). Expert presenters make a difference in conference education. Retrieved from http://velvetchainsaw.com/2011/11/28/expert-presenters-make-difference-conference-education/

Ingram, A. L., Hathorn, L. G., & Evans, A. (2000). Beyond chat on the internet. *Computers & Education*, *35*(1), 21–35. http://doi.org/10.1016/S0360-1315(00)00015-4

Jacobs, N., & McFarlane, A. (2005). Conferences as learning communities: some early lessons in using "back-channel" technologies at an academic conference – distributed intelligence or divided attention? *Journal of Computer Assisted Learning*, *21*(5), 317–329. http://doi.org/10.1111/j.1365-2729.2005.00142.x

Johnson, B., & Christensen, L. (2012). *Educational research: Quantitative, qualitative, and mixed research.* SAGE Publications Inc. Retrieved from https://us.sagepub.com/en-us/nam/educational-research/book237507

Johnson, M., & Tremethick, M. J. (2009). Exploring a virtual conference web site for undergraduate health education students. *International Electronic Journal of Health Education*, *12*, 194–202.

José Molina Azorín, R. C., & Cameron, R. (2010). The application of mixed methods in organisational research: A literature review. *Electronic Journal of Business Research Methods*, *8*(2), 95–105.

Kear, K. (2010). Social presence in online learning communities. Presented at the Proceedings of the 7th International Conference on Networked Learning 2010, Aalborg, Denmark. Retrieved from http://www.networkedlearningconference.org.uk/

Kear, K., Chetwynd, F., & Jefferis, H. (2014). Social presence in online learning communities: The role of personal profiles. *Research in Learning Technology*, *22*. http://doi.org/10.3402/rlt.v22.19710

Kehrwald, B. (2010). Being online: Social presence as subjectivity in online learning. *London Review of Education*, *8*(1), 39–50.

Kimberlin, C. L., & Winterstein, A. G. (2008). Validity and reliability of measurement instruments used in research. *American Journal of Health-System Pharmacy: AJHP: Official Journal of the American Society of Health-System Pharmacists*, *65*(23), 2276–2284. http://doi.org/10.2146/ajhp070364

Kim, I., & Kuljis, J. (2011). Applying content analysis to web-based content. *CIT. Journal of Computing and Information Technology*, *18*(4), 369–375.

Kimura, B., & Ho, C. (2008). Online conferences and workshops: Affordable & ubiquitous learning opportunities for faculty development. In *Distance Learning and Internet Conference 2008* (pp. 61–65). Retrieved from http://www.waseda.jp/DLI2008/program/proceedings/pdf/session3-1.pdf

Kimura, B., & Shimabukuro, J. (2001). The teaching in the community colleges (TCC) online conference. *LeagueTLC Innovation Express*. Retrieved from http://www.league.org/leaguetlc/express/inn0107.htm

Kirkpatrick, J. (1996). TCC online conference chronicle. Retrieved from http://kairos.technorhetoric.net/1.2/coverweb/Kirkpatrick/

Kitchen, D., & McDougall, D. (1999). Collaborative learning on the internet. *Journal of Educational Technology Systems*, *27*(3), 245–258. http://doi.org/10.2190/5H41-K8VU-NRFJ-PDYK

Kramer, A. D. I., Oh, L. M., & Fussell, S. R. (2006). Using linguistic features to measure presence in computer-mediated communication. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (pp. 913–916). New York, NY, USA: ACM. http://doi.org/10.1145/1124772.1124907

Kreijns, K., Kirschner, P. A., Jochems, W., & Buuren, H. van. (2010). Measuring perceived social presence in distributed learning groups. *Education and Information Technologies*, *16*(4), 365–381. http://doi.org/10.1007/s10639-010-9135-7

Kumar, S., & Ritzhaupt, A. D. (2014). Adapting the community of inquiry survey for an online graduate program: Implications for online programs. *E-Learning and Digital Media*, *11*(1), 59–71. http://doi.org/10.2304/elea.2014.11.1.59

Ladyshewsky, R. (2013). Instructor presence in online courses and student satisfaction. *International Journal for the Scholarship of Teaching and Learning*, *7*(1). Retrieved from http://digitalcommons.georgiasouthern.edu/ij-sotl/vol7/iss1/13

Lambert, J., & Fisher, J. (2013). Community of inquiry framework: Establishing community in an online course. *Journal of Interactive Online Learning*, *12*(1), 1–16.

Lawrence, J., & Tar, U. (2013). The use of grounded theory technique as a practical tool for qualitative data collection and analysis. *The Electronic Journal of Business Research Methods*, *11*(1), 29–40.

Leafman, J. S., & Mathieson, K. (2015). Online Instructor Perceptions of Social Presence and Educational use of Social Media. *Advances in Social Sciences Research Journal*, *2*(11). http://doi.org/10.14738/assrj.211.1637

Lee, R. M., & Robbins, S. B. (1998). The relationship between social connectedness and anxiety, self-esteem, and social identity. *Journal of Counseling Psychology*, *45*(3), 338–345. http://doi.org/10.1037/0022-0167.45.3.338

Lee, S. M. (2014). The relationships between higher order thinking skills, cognitive density, and social presence in online learning. *The Internet and Higher Education*, *21*, 41–52. http://doi.org/10.1016/j.iheduc.2013.12.002

Leh, A. S. C. (2001). Computer-mediated communication and social presence in a distance learning environment. *International Journal of Educational Telecommunications*, *7*(2), 109–28.

Leong, P., Joseph, S. R. H., & Boulay, R. (2010). Applying constant comparative and discourse analyses to virtual worlds research. *Journal For Virtual Worlds Research*, *3*(1). http://doi.org/10.4101/jvwr.v3i1.815

Lin, G.-Y. (2004). *Social presence questionnaire of online collaborative learning: Development and validity*. Retrieved from http://eric.ed.gov/?id=ED484999

Lin, G. Y., Laffey, J. M., Lin, G. Y., & Laffey, J. M. (2004). Effects of different activity types and time on online social presence (Vol. 2004, pp. 1996–2000). Presented at the E-Learn: World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education. Retrieved from https://www.learntechlib.org/p/11615/

Lipman, M. (1991). *Thinking in Education*. New York, NY: Cambridge University Press. Retrieved from http://catdir.loc.gov/catdir/samples/cam031/2002023089.pdf

Lomicka, L., & Lord, G. (2007). Social presence in virtual communities of foreign language (FL) teachers. *System*, *35*(2), 208–228. http://doi.org/10.1016/j.system.2006.11.002

Lowenthal, P. (2009). The evolution and influence of social presence theory on online learning. In *Online Education and Adult Learning: New Frontiers for Teaching Practices* (pp. 124–139). Hershey, PA: IGI Global. Retrieved from https://books.google.com

Lowenthal, P. R. (2012). *Social presence: What is it? How do we measure it?* University of Colorado at Denver. Retrieved from http://gradworks.umi.com/35/06/3506428.html

Lowenthal, P. R., & Dunlap, J. C. (2013). Problems measuring social presence in a community of inquiry. *E-Learning and Digital Media*, *11*(1). Retrieved from http://patricklowenthal.com/publications/Problems_measuring_social_presence_in_a_community_of_inquiry.pdf

Lowenthal, P. R., & Leech, N. (2009). Mixed research and online learning: Strategies for improvement. In T. Kidd (Ed.), *Online Education and Adult Learning: New Frontiers for Teaching Practices* (pp. 202–211). Hershey, PA: Information Science Reference. Retrieved from http://works.bepress.com/patrick_lowenthal/23

Lowenthal, P. R., & Lowenthal, A. (2010). *A mixed methods examination of instructor social presence in accelerated online courses*. Paper presented at the American Education Research Association, Denver, CO.

Lowenthal, P. R., Lowenthal, D. A., & White, J. W. (2009). The changing nature of online communities of inquiry: An analysis of how discourse and time shapes students' perceptions of presence. In M. Simonson (Ed.), *32nd Annual proceedings: Selected research and development papers presented at the annual convention of the Association for Educational Communications and Technology* (pp. 173–179). Washington D.C.:

Association for Educational Communications and Technology. Retrieved from http://www.academia.edu/363652/The_changing_nature_of_online_communities_of_inquiry_An_analysis_of_how_discourse_and_time_shapes_students_perceptions_of_presence

Lowenthal, P. R., Wilson, B., & Parrish, P. (2009). *Context matters: A description and typology of the online learning landscape*. Paper presented at the 2009 AECT International Convention, Louisville, KY. Retrieved from http://www.researchgate.net/publication/228632390_Context_matters_A_description_and_typology_of_the_online_learning_landscape

Lui, A. K., Tsang, P., Kwan, R., Ng, S. C., Cheung, Y. H. Y., & Choy, S. O. (2007). An evaluation framework of expertise presence in computer conferences. *British Journal of Educational Technology*, *38*(6), 1020–1036. http://doi.org/10.1111/j.1467-8535.2006.00690.x

Mackey, A., & Gass, S. (2005). *Second language research: Methodology and design*. Mahwah, NJ: Lawrence Erlbaum Associates. Retrieved from http://npu.edu.ua/!e-book/book/djvu/A/iif_kgpm_Mackey_Second%20Language%20Methodology%20and%20Design..pdf

Maggioli, G. D. (2012). *Teaching Language Teachers: Scaffolding Professional Learning*. Plymouth, UK: Rowman & Littlefield.

Malik, K. (2011). Virtual research conferences: A case based analysis. *International Journal of Virtual Communities and Social Networking*, *3*(4), 32–45. http://doi.org/10.4018/jvcsn.2011100103

Mandermach, B. J., Gonzales, R. M., & Garrett, A. L. (2006). An examination of online instructor presence via threaded discussion participation. *Journal of Online Learning and Teaching*, *2*(4), 248–260.

Mannsfeld, M., Wichmann, A., Nicole Kramer, & Rummel, N. (2013). Blended learning experiences in a multimodal setting: The impact of communication channels and learners' CMC expertise on perceived social presence and motivation (Vol. 2, pp. 89–92). Presented at The Computer Supported Collaborative Learning (CSCL) Conference 2013, Volume 2, Lulu.com. Retrieved from http://gerrystahl.net/proceedings/cscl2013/cscl2013proceedings2.pdf

Mayne, L. A., & Qiang Wu. (2011). Creating and Measuring Social Presence in Online Graduate Nursing Courses. *Nursing Education Perspectives*, *32*(2), 110–114. http://doi.org/10.5480/1536-5026-32.2.110

Mayoh, J., & Onwuegbuzie, A. J. (2013). Toward a conceptualization of mixed methods phenomenological research. *Journal of Mixed Methods Research*, 1558689813505358. http://doi.org/10.1177/1558689813505358

McKerlich, R., Riis, M., Anderson, T., & Eastman, B. (2011). Student perceptions of teaching presence, social presence, and cognitive presence in a virtual world [Article]. Retrieved November 16, 2015, from http://auspace.athabascau.ca/handle/2149/3519

McWhorter, R., Mancuso, D., & Roberts, P. B. (2014). Exploring professional online conferences for the adult learner. In J. K. Holtz, S. B. Springer, & C. J. Boden-McGill (Eds.), *Developing and Sustaining Adult Learners* (pp. 267–281). Charlotte, NC: Information Age Publishing.

Mehrabian, A. (1968). Some referents and measures of nonverbal behavior. *Behavior Research Methods & Instrumentation*, *1*(6), 203–207. http://doi.org/10.3758/BF03208096

Mennecke, B. E., Triplett, J. L., Hassall, L. M., Conde, Z. J., & Heer, R. (2011). An examination of a theory of embodied social presence in virtual worlds. *Decision Sciences*, *42*(2), 413–450. http://doi.org/10.1111/j.1540-5915.2011.00317.x

Menzie, K. A. (1991). *Building online relationships: Relationship marketing and social presence as foundations for a university library blog*. The University of Kansas, United States -- Kansas. Retrieved from http://search.proquest.com.eres.library.manoa.hawaii.edu/pqdtglobal/docview/305321534/abstract/FDA0FD685B8E4D85PQ/1

Mertler, C., & Vannatta, R. (2005). *Advanced and Multivariate Statistical Methods: Practical Application and Interpretation* (2nd ed.). Pyrczak Publishing. Retrieved from http://www.unt.edu/rss/class/Jon/ResourcesWkshp/2002_MertlerVannatta_Ch3.pdf

Miller, L. E. (1998). Appropriate analysis. *Journal of Agricultural Education*, *39*(2), 1–10.

Minshull, G. (2006). Evaluation report highlights, innovating e-learning 2006 online conference. Retrieved from http://www.jisc.ac.uk/uploaded_documents/evaluation%20highlights%20innovating%20e-learning%202006.doc

Mundry, S., Britton, E., Raizen, S., & Loucks-Horsley, S. (2000). *Designing successful professional meetings and conferences in education: Planning, implementation, and evaluation*. Thousand Oaks, CA: Corwin Press.

Murphrey, T. P., & Coppernoll, S. (2006). Facilitating the adoption of an online conferencing system--A recipe for success. *Journal of Extension*, *44*(3). Retrieved from http://www.joe.org/joe/2006june/iw1.php

Murphy, A., Antonio, A., Reushle, S. (2012). Encouraging active participant engagement in the evaluation of online conferencing In *Proceedings of Global Learn 2012* (pp. 42-47). Association for the Advancement of Computing in Education (AACE). Retrieved September 11, 2016 from https://www.learntechlib.org/p/42038.

Murphy, A., & Reushle, S. (2012). Following the sun: Sustainable conferencing in a climate of change. In *ASCILITE 2012: 29th Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education: Future Challenges, Sustainable Futures. Australasian Society for Computers in Learning in Tertiary Education (ASCILITE).* Retrieved from http://www.academia.edu/2224027/Following_the_Sun_Sustainable_conferencing_in_a_climate_of_change

Murray, D. L. (2002). Keeping pace: The dance of online conferencing. *Journal of Instruction Delivery Systems*, *16*(4), 22–25.

Nippard, E., & Murphy, E. (2007). Social presence in the web-based synchronous secondary classroom. *Canadian Journal of Learning and Technology / La Revue Canadienne de L'apprentissage et de La Technologie*, *33*(1), N/A.

Nirban, V., Sangwan, D., & Rathore, S. (2011). Language alterations in internet relay chat discourse. *International Journal of Research in Management & Technology*, *1*(2), 93–96.

Nowak, K. L., & Biocca, F. (2003). The effect of the agency and anthropomorphism on users' sense of telepresence, copresence, and social presence in virtual environments. *Presence*, *12*(5), 481–494. http://doi.org/10.1162/105474603322761289

Nudell, D., Roth, B., & Saxowsky, D. (2005). Non-traditional extension education using video conference. *Journal of Extension*, *43*(1), N/A.

Onwuegbuzie, A. J., & Leech, N. L. (2006). Linking research questions to mixed methods data analysis procedures. *Qualitative Report*, *11*(3), 474–498.

Oualha, L., & Matula, T. (2009). The potential of online academic conferences to increase faculty interaction in a networked world. *European Journal of Management*, *9*(4), N/A.

Oztok, M., & Brett, C. (2011). Social presence and online learning: A review of research. *International Journal of E-Learning & Distance Education*, *25*(3). Retrieved from http://www.ijede.ca/index.php/jde/article/view/758

Oztok, M., Zingaro, D., Brett, C., & Hewitt, J. (2013). Exploring asynchronous and synchronous tool use in online courses. *Computers & Education*, *60*(1), 87–94. http://doi.org/10.1016/j.compedu.2012.08.007

Palloff, R. M., & Pratt, K. (2001). *Lessons from the cyberspace classroom: The realities of online teaching*. Presented at the 17TH Annual Conference On Distance Teaching And Learning, Madison, Wisconsin. Retrieved from http://www.uwex.edu/disted/conference/resource_library/proceedings/01_20.pdf

Palmquist, M. (2005). Content analysis: Writing@CSU. Retrieved February 9, 2016, from http://writing.colostate.edu

Parcell, J., & Giddens, N. (2002). Assessment of NetMeeting® for professional development programming. *Journal of Extension*, *40*(5), N/A.

Parker, A., & Parker, S. (2013). *Interaction: The Vital Conversation in Online Instruction*. Retrieved from http://eric.ed.gov/?id=ED541876

Parsell, M., & Duke-Yonge, J. (2007). Virtual communities of enquiry: An argument for their necessity and advice for their creation. *E-Learning and Digital Media*, *4*(2), 181–193. http://doi.org/10.2304/elea.2007.4.2.181

Participant statistics and response rates QuestionPro Online Survey Software. (n.d.). Retrieved August 9, 2016, from http://www.questionpro.com/help/113.html

Pellas, N., & Kazanidis, I. (2013). The impact of computer self-efficacy, situational interest and academic self-concept in virtual communities of inquiry during the distance learning procedures through Second Life. *World Wide Web*, *17*(4), 695–722. http://doi.org/10.1007/s11280-013-0266-9

Pena-Shaff, J., Martin, W., & Gay, G. (2001). An epistemological framework for analyzing student interactions in computer mediated communication environments. *Journal of Interactive Learning Research*, *12*(1), 41–68.

Pennebaker, J., Boyd, R. L., Jordan, K., & Blackburn, K. (2015). *The development and psychometric properties of LIWC2015.* Austin, TX: University of Texas at Austin.

Picciano, A. G. (2002). Beyond student perceptions: Issues of interaction, presence, and performance in an online course. *Journal of Asynchronous Learning Networks*, *6*, 21–40.

Polkinghorne, D. E. (2005). Language and meaning: Data collection in qualitative research. *Journal of Counseling Psychology*, *52*(2), 137–145.

Pollard, H., Minor, M., & Swanson, A. (2014). Instructor social presence within the community of inquiry framework and its impact on classroom community and the learning environment. *Online Journal of Distance Learning Administration*, *17*(2), N/A.

Preece, J., & Maloney-Krichmar, D. (2005). Online communities: Design, theory, and practice. *Journal of Computer-Mediated Communication*, *10*(4), N/A. http://doi.org/10.1111/j.1083-6101.2005.tb00264.x

Rabinowitz, P. (2012). Organizing a conference. Retrieved from http://ctb.ku.edu/en/table-of-contents/structure/training-and-technical-assistance/conferences/main

Rafaeli, S. (1988). Interactivity: From new media to communication. In R. P. Hawkins, J. M. Wieman, & S. Pingree (Eds.), *Advancing communication science: merging mass and interpersonal processes* (Vol. 16, pp. 110–134). Newbury, CA: Sage. Retrieved from http://gsb.haifa.ac.il/~sheizaf/interactivity/Interactivity_Rafaeli.pdf

Ravn, I. (2007). The learning conference. *Journal of European Industrial Training*, *31*(3), 212–222. http://doi.org/10.1108/03090590710739287

Redmond, P., & Lock, J. V. (2006). A flexible framework for online collaborative learning. *The Internet and Higher Education*, *9*(4), 267–276. http://doi.org/10.1016/j.iheduc.2006.08.003

Rekkedal, T., & Paulsen, M. F. (1989). Computer conferencing in distance education: Status and trends. *European Journal of Education*, *24*(1), 61–72. http://doi.org/10.2307/1503146

Remesal, A., & Friesen, N. (2014). Inquiry into "communities of inquiry": Knowledge, communication, presence, community. *E-Learning and Digital Media*, *11*(1), 1–4. http://doi.org/10.2304/elea.2014.11.1.1

Reychav, I., & Te'eni, D. (2009). Knowledge exchange in the shrines of knowledge: The how's and where's of knowledge sharing processes. *Computers & Education*, *53*(4), 1266–1277. http://doi.org/10.1016/j.compedu.2009.06.009

Rheingold, H. (1993). The virtual community: Homesteading on the electronic frontier. Retrieved November 23, 2015, from http://www.rheingold.com/vc/book/

Richardson, J. C., Koehler, A. A., Besser, E. D., Caskurlu, S., Lim, J., & Mueller, C. M. (2015a). Conceptualizing and investigating instructor presence in online learning environments. *The International Review of Research in Open and Distributed Learning*, *16*(3). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/2123

Richardson, J. C., & Swan, K. (2003). Examing social presence in online courses in relation to students' perceived learning and satisfaction. Retrieved from https://www.ideals.illinois.edu/handle/2142/18713

Richmond, V. P. (2002). Teacher nonverbal immediacy: Uses and outcomes. In J. L. Chesebro & J. C. McCrosky (Eds.), *Communication for Teachers* (pp. 65–82). Boston: Allyn & Bacon.

Riege, A. M. (2003). Validity and reliability tests in case study research: a literature review with "hands-on" applications for each research phase. *Qualitative Market Research: An International Journal*, *6*(2), 75–86. http://doi.org/10.1108/13522750310470055

Roberson, T. J., & Klotz, J. (2001). Chat: the missing link in on-line instruction. Presented at the Mid-South Educational Research Association, Little Rock, AR. Retrieved from http://files.eric.ed.gov/fulltext/ED460160.pdf

Rockinson-Szapkiw, A. J. (2009). *The impact of asynchronous and synchronous instruction and discussion on cognitive presence, social presence, teaching presence, and learning*. Regent University. Retrieved from http://pqdtopen.proquest.com/doc/250918726.html?FMT=ABS

Romiszowski, A., & Mason, R. (1996). Computer-mediated communication. In D. Johnassen (Ed.), *Handbook of research for educational communications and technology* (pp. 438–456). New York: Macmillan. Retrieved from http://aect.org/edtech/15.pdf

Rom, M. (2012). The scholarly conference: Do we want democracy and markets or authority and tradition? *Journal of Political Science Education*, *8*(4), 333–351. http://doi.org/10.1080/15512169.2012.729449

Rourke, L., Anderson, T., Garrison, D. R., & Archer, W. (1999a). Assessing social presence in asynchronous text-based computer conferencing. *The Journal of Distance Education / Revue de L'ducation Distance*, *14*(2), 50–71.

Rourke, L., & Kanuka, H. (2009). Learning in communities of inquiry: A review of the literature. *Journal of Distance Education*, *23*(1), 19–48.

Rovai, A. P. (2002). Building Sense of Community at a Distance. *The International Review of Research in Open and Distributed Learning*, *3*(1). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/79

Rovai, A. P., & Jordan, H. (2004). Blended learning and sense of community: A comparative analysis with traditional and fully online graduate courses. *The International Review of Research in Open and Distributed Learning*, *5*(2). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/192

Rovai, A. P., Wighting, M. J., & Lucking, R. (2004). The classroom and school community inventory: Development, refinement, and validation of a self-report measure for educational research. *The Internet and Higher Education*, *7*(4), 263–280. http://doi.org/10.1016/j.iheduc.2004.09.001

Ruedenberg, L., Danet, B., & Rosenbaum-Tamari, Y. (1995). Virtual virtuosos: Play and performance at the computer keyboard. *Electronic Journal of Communication*, *4*(4). Retrieved from http://www.cios.org/www/ejc/v4n23494.htm

Rutter, D. R., & Stephenson, G. M. (1979). The role of visual communication in social interaction. *Current Anthropology*, *20*(1), 124. http://doi.org/10.1086/202217

Salinäs, E.-L. (2002). Collaboration in multi-modal virtual worlds: Comparing touch, text, voice and video. In R. S. B. MSc (Ed.), *The Social Life of Avatars* (pp. 172–187). Springer London. Retrieved from http://link.springer.com/chapter/10.1007/978-1-4471-0277-9_10

Salmons, J. (2009). *Designing and conducting research with online interviews*. Sage Publications, Thousand Oaks CA. Retrieved from http://www.sagepub.in/upm-data/43888_1.pdf

Salton, G. (1980). The network nation — Human communication via computer — S. R. Hiltz and M. Turoff. *Professional Communication, IEEE Transactions on*, *PC-23*(2), 107–108. http://doi.org/10.1109/TPC.1980.6501869

Savicki, V., & Kelley, M. (2000). Computer mediated communication: Gender and group composition. *CyberPsychology & Behavior*, *3*(5), 817–826. http://doi.org/10.1089/10949310050191791

Schwier, R. A., & Balbar, S. (2002). The interplay of content and community in synchronous and asynchronous communication: Virtual communication in a graduate seminar. *Canadian Journal of Learning and Technology / La Revue Canadienne de L'apprentissage et de La Technologie*, *28*(2), N/A.

Senese, J. (2010). The zen of annual meeting attendance and conferencing. *Administration Publications and Research*. Retrieved from http://scholarsarchive.jwu.edu/admin_publications/3

Shackelford, J. L., & Maxwell, M. (2012). Sense of community in graduate online education: Contribution of learner to learner interaction. *The International Review of Research in Open and Distributed Learning*, *13*(4), 228–249.

Shaffer, G. L., & McNinch, G. H. (1997). Professional conferences: Who attends them; who does not; and why? *College Student Journal*, *31*(3), 362.

Shea, P., & Bidjerano, T. (2010). Learning presence: Towards a theory of self-efficacy, self-regulation, and the development of a communities of inquiry in online and blended learning environments. *Computers & Education*, *55*(4), 1721–1731. http://doi.org/10.1016/j.compedu.2010.07.017

Shea, P., Hayes, S., Smith, S. U., Vickers, J., Bidjerano, T., Pickett, A., … Jian, S. (2012). Learning presence: Additional research on a new conceptual element within the Community of Inquiry (CoI) framework. *The Internet and Higher Education*, *15*(2), 89–95. http://doi.org/10.1016/j.iheduc.2011.08.002

Shea, P., Hayes, S., & Vickers, J. (2010). Online instructional effort measured through the lens of teaching presence in the community of inquiry framework: A re-examination of measures and approach. *The International Review of Research in Open and Distributed Learning*, *11*(3), 127–154.

Shea, P., Pickett, A., & Pelz, W. (2004). Enhancing student satisfaction through faculty development: The importance of teaching presence. In J. Bourne & J. C. Moore (Eds.),

Elements of quality online education: Into the mainstream (Vol. 5, pp. 39–59). Needham, MA: Sloan Center for Online Education.

Shea, P., Sau Li, C., & Pickett, A. (2006). A study of teaching presence and student sense of learning community in fully online and web-enhanced college courses. *The Internet and Higher Education*, *9*(3), 175–190. http://doi.org/10.1016/j.iheduc.2006.06.005

Shen, K., & Khalifa, M. (2009). Design for social presence in online communities: A multidimensional approach. *AIS Transactions on Human-Computer Interaction*, *1*(2), 33–54.

Shimabukuro, J. (2000). What is an online conference? Retrieved April 22, 2013, from http://technologysource.org/article/what_is_an_online_conference/

Short, J., Williams, E., & Christie, B. (1976). *The social psychology of telecommunications*. Wiley.

Siemens, G., Tittenberger, P., & Anderson, T. (2008). Conference connections: Rewiring the circuit. Retrieved April 22, 2013, from http://net.educause.edu/ir/library/pdf/ERM0820.pdf

Sivunen, A., & Nordbäck, E. (2015). Social presence as a multi-dimensional group construct in 3D virtual environments. *Journal of Computer-Mediated Communication*, *20*(1), 19–36. http://doi.org/10.1111/jcc4.12090

Soy, S. (1997). The Case study as a research method. Retrieved February 20, 2016, from https://www.ischool.utexas.edu/~ssoy/usesusers/l391d1b.htm

Spatariu, A., Hartley, K., & Bendixen, L. D. (2004). Defining and measuring quality in online discussions. *Journal of Interactive Online Learning*, *2*(4).

Stahl, G., Koschmann, T., & Suthers, D. (2006). Computer-supported collaborative learning: An historical perspective. In *Cambridge handbook of the learning sciences* (pp. 409–426). Cambridge, UK: Cambridge University Press.

Stake, R. E. (1995). *The art of case study research.* Thousand Oaks, CA: Sage.

Stein, D. S., & Wanstreet, C. E. (2003). Role of social presence, choice of online or face-to-face group format, and satisfaction with perceived knowledge gained in a distance learning environment. Presented at the 2003 Midwest Research to Practice Conference in Adult, Continuing, and Community Education, Columbus, OH. Retrieved from http://distance-educator.com/role-of-social-presence-choice-of-online-or-face-to-face-group-format-and-satisfaction-with-perceived-knowledge-gained-in-a-distance-learning-environment/

Stein, D. S., Wanstreet, C. E., Glazer, H. R., Engle, C. L., Harris, R. A., Johnston, S. M., … Trinko, L. A. (2007). Creating shared understanding through chats in a community of inquiry. *The Internet and Higher Education*, *10*(2), 103–115. http://doi.org/10.1016/j.iheduc.2007.02.002

Stepich, D. A., & Ertmer, P. A. (2003). Building Community as a Critical Element of Online Course Design. *Educational Technology*, *43*(5), 33–43.

Stevens, V. (2005). Behind the scenes at the webheads in action online convergence. *The Electronic Journal for English as a Second Language*, *9*(3), 1–15.

Stone, S. J., & Chapman, D. D. (2006). *Instructor Presence in the Online Classroom*. Retrieved from http://eric.ed.gov/?id=ED492845

Strijbos, J.-W., Martens, R. L., Prins, F. J., & Jochems, W. M. G. (2006). Content analysis: What are they talking about? *Computers & Education*, *46*(1), 29–48. http://doi.org/10.1016/j.compedu.2005.04.002

Sung, E., & Mayer, R. E. (2012). Five facets of social presence in online distance education. *Computers in Human Behavior*, *28*(5), 1738–1747. http://doi.org/10.1016/j.chb.2012.04.014

Suskie, L. A. (1996). *Questionnaire Survey Research: What Works* (2 edition). Tallahassee, FL: Assn for Institutional Research.

Suter, V., Alexander, B., & Kaplan, P. (2005). Social software and the future of conferences right now. *Educause Review*, *40*(1), 46–59.

Swan, K. (2002a). Building learning communities in online courses: The importance of interaction. *Education, Communication & Information*, *2*(1), 23–49.

Swan, K. (2015). *Social presence online: Three research lenses*. Presented at the 21st Annual Online Learning Consortium International Conference, Orlando, Florida. Retrieved from https://secure.onlinelearningconsortium.org/conference/2015/aln/social-presence-online-three-research-lenses

Swan, K., Garrison, D. R., & Richardson, J. C. (2009). A constructivist approach to online learning: the Community of Inquiry framework. In C. Payne (Ed.), *Information Technology and Constructivism in Higher Education: Progressive Learning Frameworks: Progressive Learning Frameworks* (pp. 43–57). IGI Global.

Swan, K., & Ice, P. (2010). The community of inquiry framework ten years later: Introduction to the special issue. *The Internet and Higher Education*, *13*(1–2), 1–4. http://doi.org/10.1016/j.iheduc.2009.11.003

Swan, K., & Shih, L. F. (2005). On the nature and development of social presence in online course discussions. *Journal of Asynchronous Learning Networks*, *9*, 115–136.

Szeto, E. (2015). Community of inquiry as an instructional approach: What effects of teaching, social and cognitive presences are there in blended synchronous learning and teaching? *Computers & Education*, *81*, 191–201. http://doi.org/10.1016/j.compedu.2014.10.015

Tausczik, Y. R., & Pennebaker, J. W. (2010). The psychological meaning of words: LIWC and computerized text analysis methods. *Journal of Language and Social Psychology*, *29*(1), 24–54. http://doi.org/10.1177/0261927X09351676

Tu, C. (2002). The impacts of text-based CMC on online social presence. *The Journal of Interactive Online Learning*, *1*(2), 1–24.

Tu, C. H. (2000). Strategies to increase interaction in online social learning environments (Vol. 2000, pp. 1662–1667). Presented at the Society for Information Technology & Teacher Education International Conference. Retrieved from /p/15884/

Tu, C.-H., & Corry, M. (2004). Online discussion durations impact online social presence (Vol. 2004, pp. 3073–3077). Presented at the Society for Information Technology & Teacher Education International Conference. Retrieved from https://www.learntechlib.org/p/13320/

Tu, C. H., & McIsaac, M. (2002). The relationship of social presence and interaction in online classes. *American Journal of Distance Education*, *16*(3), 131–50.

VanWynsberghe, R., & Khan, S. (2008). Redefining case study. *International Journal of Qualitative Methods*, *6*(2), 80–94.

Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press. Retrieved from http://www.cles.mlc.edu.tw/~cerntcu/099-curriculum/Edu_Psy/EP_03_New.pdf

Walther, J. B. (1996). Computer-mediated communication: Impersonal, interpersonal, and hyperpersonal interaction. *Communication Research*, *23*(1), 3–43.

Wang, Y. (1999). Online conference: A participant's perspective. *THE Journal*, *26*(8), 70.

Warburton, S. (2009). Second life in higher education: Assessing the potential for and the barriers to deploying virtual worlds in learning and teaching. *British Journal of Educational Technology*, *40*(3), 414–426. http://doi.org/10.1111/j.1467-8535.2009.00952.x

Wei, C. W., Chen, N. S., & Kinshuk. (2012). A model for social presence in online classrooms. *Educational Technology Research and Development*, *60*(3), 529–545. http://doi.org/10.1007/s11423-012-9234-9

Welch, C. J., Ray, S., Melendez, J., Fare, T., & Leach, M. (2010). Virtual conferences becoming a reality. *Nature Chemistry*, *2*(3), 148–152. http://doi.org/10.1038/nchem.556

Weller, M. (2011). *The Digital Scholar: How Technology is Transforming Scholarly Practice*. A&C Black.

Wheeler, K. (2015). *A mixed method study examining synchronous-enhanced learning in distance education*. University of South Florida. Retrieved from http://scholarcommons.usf.edu/etd/5865

Whiteman, J. A. M. (2002). Interpersonal communication in computer mediated learning. Retrieved from http://eric.ed.gov/?id=ED465997

White, M. D., & Marsh, E. E. (2006). Content analysis: A flexible methodology. Retrieved from https://www.ideals.illinois.edu/handle/2142/3670

Whiteside, A. L. (2007). *Exploring social presence in communities of practice within a hybrid learning environment: A longitudinal examination of two case studies within the School*

Technology Leadership graduate -level certificate program. University of Minnesota. Retrieved from http://gradworks.umi.com/32/75/3275052.html

Whiteside, A. L. (2015). Introducing the social presence model to explore online and blended learning experiences. *Online Learning Journal*, *19*(2). Retrieved from http://olj.onlinelearningconsortium.org/index.php/olj/article/view/453

Whittaker, S., Isaacs, E., & O'Day, V. (1997). Widening the net: Workshop report on the theory and practice of physical and Nnetwork communities. *SIGCHI Bull.*, *29*(3), 27–30. http://doi.org/10.1145/264853.264867

Wickersham, L. E., & Dooley, K. E. (2006). A content analysis of critical thinking skills as an indicator of quality of online discussion in virtual learning communities. *Quarterly Review of Distance Education*, *7*(2), 185–193.

Wiener, M., & Mehrabian, A. (1968). *Language within language: immediacy, a channel in verbal communication*. New York: Appleton-Century-Crofts. Retrieved from https://books.google.com

Wiessner, C. A., Hatcher, T., Chapman, D., & Storberg-Walker, J. (2008). Creating new learning at professional conferences: an innovative approach to conference learning, knowledge construction and programme evaluation. *Human Resource Development International*, *11*(4), 367–383. http://doi.org/10.1080/13678860802261488

Wighting, M. (2011). Measuring sense of community and perceived learning among alternative licensure candidates. *Journal of the National Association for Alternative Certification*, *6*(1), 4–12.

Wilkinson, K. L., & Hemby, K. V. (2000). An examination of perceptions of the use of virtual conferences in organizations: The Organizational Systems Research Association (OSRA)

and the Association for Business Communication (ABC) members speak out. *Information Technology, Learning, and Performance Journal*, *18*(2), 13–23.

Woods, R., & Ebersole, S. (2003). Becoming a communal architect in the online classroom - integrating cognitive and affective learning for maximum effect in web-based learning. *Online Journal of Distance Learning Administration*, *6*(1). Retrieved from http://www.westga.edu/~distance/ojdla/spring61/woods61.htm

Word roots: The web's largest root words and prefix directory. (n.d.). Retrieved from https://www.learnthat.org/pages/view/roots.html#f

Xin, C. (2012). A critique of the community of inquiry framework. *International Journal of E-Learning & Distance Education*, *26*(1), N/A.

Yamagata-Lynch, L. C. (2014). Blending online asynchronous and synchronous learning. *The International Review of Research in Open and Distributed Learning*, *15*(2). Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/1778

Yin, R. K. (1999). Enhancing the quality of case studies in health services research. *Health Services Research*, *34*(5 Pt 2), 1209–1224.

Yin, R. K. (2003). *Applications of case study research*. SAGE. Retrieved from http://www.sagepub.com/sites/default/files/upm-binaries/41407_1.pdf